

Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Volume XI.

CHICAGO, ILL, MARCH 22, 1912.

Number 9.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratine's" waterproofing material. "Universal," "Acme" and "Electrod" Brands Ready Roofing. Get our prices. Birmingham, Ala. Atlanta, Ga. New Orleans, La.



UNION MINING COMPANY

Manufacturers of the Celebrated



DEVOYE a special department to the manufacture of Brick particularly adapted both physically and chemically to

Lime Kiln and
Cement Kiln
Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO.
Mount Savage, Md.
CAPACITY, 60,000 PER DAY.
ESTABLISHED 1841.



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FOR GRIFFIN
TUBE AND
BALL MILLS

Branches:

CHICAGO BELTING CO.

PURE OAK TANNED LEATHER BELTING

Send for Our Illustrated Catalog
NEW YORK PHILADELPHIA

111 North Green St., CHICAGO

NEW ORLEANS

PORTLAND, OREGON



If you read this you may rest assured others will—
It would be a splendid location for your advertisement—Just enough space to tell your story clearly and concisely. Write for rates.



Phoenix Portland Cement
Manufactured by
PHOENIX PORTLAND CEMENT CO.
NAZARETH, PA.

Sole Selling Agent, WILLIAM G. HARTRANFT CEMENT CO.
Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO.,**Ottawa, Ill.**

The Ironton Portland Cement Co.

Manufacturers of the
Celebrated Limestone Brand of Portland Cement

Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years. Cement as finely ground as any on the market. Guaranteed to pass all the standard specifications.

Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina. Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry., or Ohio River.

Write for Prices



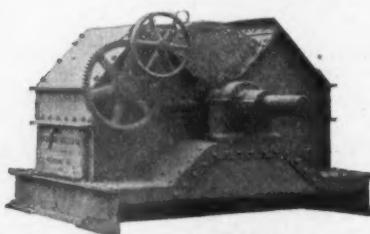
The Ironton Portland Cement Co.
Ironton, Ohio

"PENNSYLVANIA"
HAMMER CRUSHERS

For Pulverizing Lime-stone, Lime, Cement Rock, Marl, Shale, Etc.

Main Frame of steel, "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running.

No other hammer Crusher has such a big Safety Factor.



PENNSYLVANIA CRUSHER CO.
Philadelphia
New York Pittsburgh



For Prices Any Where in
CANADA
Write or Wire Our Nearest Sales Office

**Canada
Cement Company
LIMITED**

Montreal - Toronto
Winnipeg - Calgary

Montreal	Port Coborne
Hull	Shallow Lake
Bellefonte	Maribank
Lakefield	Winnipeg
Calgary	Exshaw

ONE GRADE—ONE BRAND

Alpha Portland Cement

Best in the World for
Sidewalks



Write for our Handsomely Illustrated Book. Sent Free.

General Offices: No. 7 Center Square, EASTON, PA.

SALES OFFICES:

The Oliver Bldg., PITTSBURGH.
Builders Exchange, BALTIMORE.
Marquette Building, CHICAGO.
Harrison Building, PHILADELPHIA.

Builders Exchange, BUFFALO.
Board of Trade Bldg., BOSTON.
Hudson Terminal Bldg., N. Y.
Nat'l Bank Bldg., SAVANNAH, GA.

**Quality,
Quantity and
Co-operation**



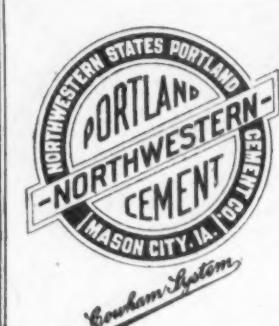
Let our nation-wide co-operative advertising campaign focus the demand for cement into your warehouse. Let our eleven mills supply your need and let our quality insure you increasing demands for



Lehigh Portland Cement

Chicago, Ill.

Allentown, Pa.



"THE BEST IS NONE TOO GOOD"
**HIGHEST GRADE of
Portland Cement**

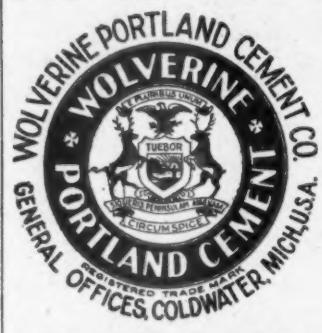
Every Barrel Absolutely Uniform.

R. R. facilities especially adapted for prompt shipments in the northwest.

Capacity 1,500,000 bbls. Yearly.

NORTHWESTERN STATES PORTLAND CEMENT COMPANY
MASON CITY, IOWA

Tell 'em you saw it in ROCK PRODUCTS



"WOLVERINE"
The Alright Cement

MADE RIGHT SOLD RIGHT
WORKS RIGHT WEARS RIGHT

The Best is None Too Good For You.
Insist Upon.

"WOLVERINE"

Write for Booklet and Quotations.
Factories at Coldwater and Quincy, Mich.
Capacity 3500 Daily.

WOLVERINE PORTLAND CEMENT COMPANY
Main Office, Coldwater, Mich.



G. J. PARKE
DECATUR, ILL.



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Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Volume XI

CHICAGO, ILL., MARCH 22, 1912

Number 9

THE BARNES SAND & GRAVEL COMPANY

Sand and Gravel Washing Plant Near Sargents, Ohio, Presents Unique Features
of Construction and Methods of Handling the Materials.

The sand and gravel washing plant of the Barnes Sand and Gravel Company, of Portsmouth, Ohio, presents some interesting features in its construction and method of operation. We take pleasure in presenting the following description of the plant and photographs of the same, both of which were furnished by A. H. Bannon, the vice-president of the company. The Barnes company's properties consist of 35 acres of land which runs about as follows: 15 feet of gravel, 20 feet of coarse sand underlying this and a fine white sand beneath this. The materials are of a high grade and have found a ready market.

In speaking of the plant, Mr. Bannon said:

"We first sent representatives of our company to visit various plants in different parts of the country. After a careful investigation we called on Mr. Dull, of Raymond W. Dull & Company, of Aurora, Ill., to design and equip our washing plant for us. We cannot speak too highly of the ability and business methods of this company, for we have been very much gratified with the results. We do not know of a single change we would make in our plant as they designed it, and so far have not had a single piece of machinery broken in the equipment which they furnished, and we have operated a season. We take pleasure in recommending them to members of the association."

"We excavate our material from the bank with a $\frac{3}{4}$ -yard American Hoist & Derrick Co.'s ditcher. This machine, although designed for a railroad ditcher, and apparently a small machine, is for us an excavator and a very fast one. We have loaded four cars, or 140 yards, in an hour's time, which, you see, is an average of four trips per minute.

The machine operates either as a shovel or as a crane with clam-shell bucket.

The ditcher delivers the material into forty-yard drop-bottom cars, which are handled by a 100-ton locomotive. The cars pass over a track hopper twenty feet square, which holds about forty yards of material. A pit gate in the bottom of the hopper feeds the material on to a 26-inch belt conveyor two hundred feet centers, which carries the material up to the stone box at the top of the bins.

"Water is pumped into the stone box by a Fairbanks-Morse Company's duplex belt-driven pump,

which delivers about 400 gallons of water per minute into the stone box. This water flushes the material into the screens, which are Mr. Dull's patented Improved Quick-Change Conical Washing Screens. There are three of these screens for making three sizes and they are certainly excellent screens for the purpose.

"The torpedo sand and fine plaster sand are separated from the muddy water by a double automatic settling tank mounted on scale beams, which automatically open valves in the bottom of the tank. When the accumulation of the sand in the tank weighs enough to overcome the weight of the counter weight, it raises the weights and opens the valves. Each end of the long tank operates independent of the opposite end and discharges the two grades of sand into separate bins, by means of one tank.

"We have had no trouble in handling fifteen cars of washed material in five hours' time right along, and employ ten men on the payroll. With some additional track for storing our loads we will handle thirty cars per day of ten hours, and this track is now being arranged for.

"We believe that we are pioneers in the use of crude oil engines for power for gravel plants, and we have been agreeably surprised at the low cost of power. We are running our plant on about a cent a horsepower hour, or less than a dollar per day for ninety horsepower. While the first cost of the oil engine is high, the running expense and attention of the plant is decidedly favorable to this kind

A NEAR VIEW SHOWING BELT CONVEYER AND METHOD OF LOADING CARS.

[Continued on Page 37.]



METHOD OF TAKING SAND AND GRAVEL FROM THE BANK. SHOWING INCLINE CONVEYER WASHING AND SCREENING ARRANGEMENT. BARNES SAND & GRAVEL COMPANY, PORTSMOUTH, O.

The Giant Griffin Mill

TAKES Clinker Kiln Size.
GIVES A Finished Cement
Ready to Sack.

Capacity

Minimum, 12 bbls. Maximum, 17 bbls.
Per Hour.

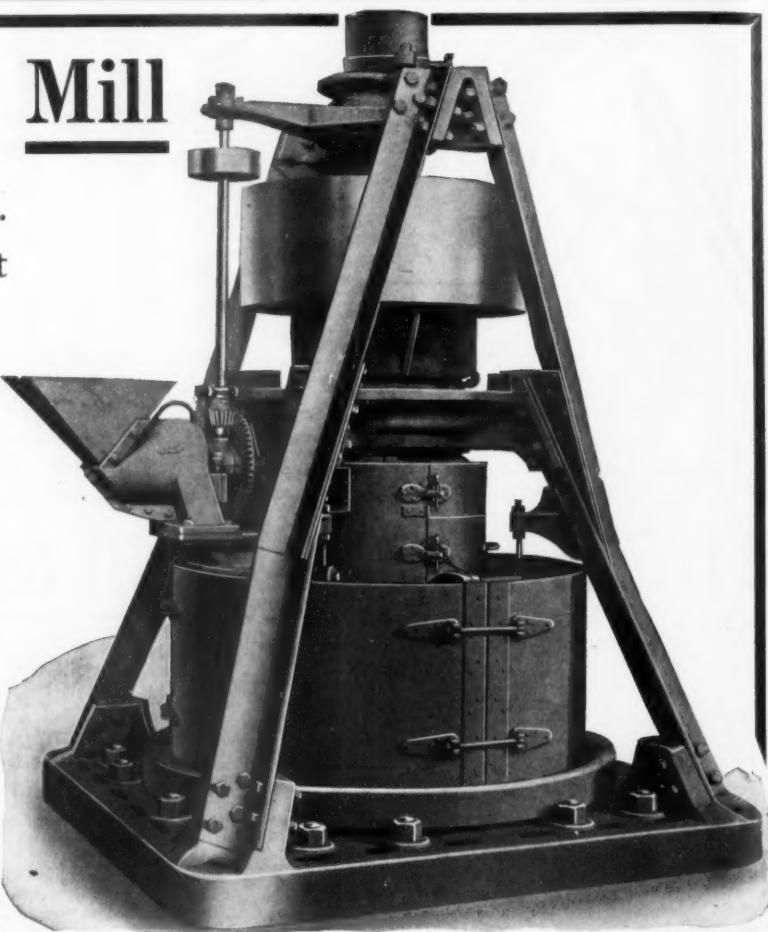
Power

From 60 to 65 H. P. Operates Mill at Full Capacity

Upkeep under 1 Cent per bbl.

THINK IT OVER

Bradley Pulverizer Co.
BOSTON, MASS.



A MACHINE that can
pulverize A TON
of limestone, granite, ore, sandstone,
gravel, etc. to a given
FINENESS

with the least cost of maintenance and
power, admittedly IS THE BEST.

Not only USERS, but COMPETITORS, have told us our
RING PULVERIZER is superior in hard material grinding

PROOF RESTS IN THE HANDS OF USERS

who have operated our RING PULVERIZER grinding
limestone for 18 months without a penny of main-
tenance cost.

BEST because no other Machine can COLLAR the
JOB. Buy the Machine that is guar-
anteed and makes its guarantee good. Write for
circular and particulars.



AMERICAN PULVERIZER COMPANY, 410 Jaccard
Building St. Louis, Mo.

"Forgot to Oil It—"

**There Is Only
One Crusher
with an Automatic
Oiling System**

The oft-repeated story of the man whose plant is out of order. Don't rely on memory, and you'll avoid expensive shut-downs. In the Symons Breaker, lubrication is automatic. The oil pump's memory never fails. Read the rest.

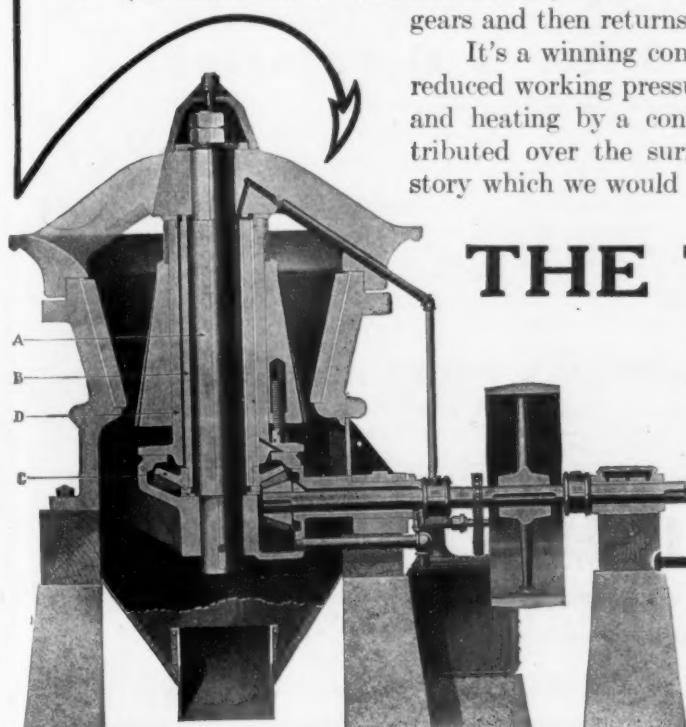
The Crusher's Life Blood is Oil.

Rock breakers work under most trying conditions, continually enveloped in a cloud of dust. It is very difficult, even with the "tightest fit," to exclude dirt from the running parts. The bearings are subject to immense pressures, very irregularly applied. When you add to these unfavorable conditions the further danger of careless supervision, any mechanic will admit the vital importance, to the practical quarryman, of the automatic oiling system peculiar to the

SYMONS CRUSHER

The oil pressure excludes the dirt. Where oil cannot get out, dirt cannot get in. The steady flow of oil (volume variable to suit conditions) washes the bearings clean, smooth and cool, immerses the gears and then returns to the tank to be used again.

It's a winning combination—only two big bearings, carrying a greatly reduced working pressure, guarded from dirt and protected from wearing and heating by a continuous oil-flow, with the working load evenly distributed over the surface of the long eccentric. But that's not half the story which we would like to tell you. Write for our catalogue No. 166.



THE T. L. SMITH CO.

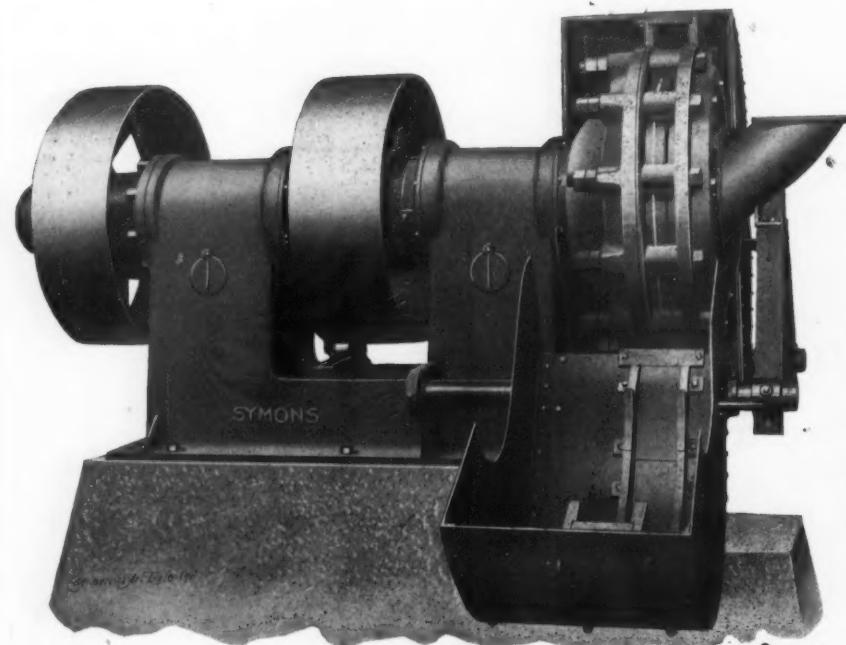
1322 MAJESTIC BLDG.
MILWAUKEE, WIS.

OLD COLONY BLDG., CHICAGO, ILL.
SCHOFIELD BLDG., CLEVELAND, O.



Tell 'em you saw it in ROCK PRODUCTS

HAVE YOU NOTICED



That the Symons Disc Crusher is the only crusher specially advertised for crushing trap-rock, hardest granite, or boulders to small sizes?

Is it not reasonable that a machine built for such work is the most durable when used to reduce limestone rejections? Extraordinary Capacity demonstrated by trial.

We sell the Disc Crusher on TRIAL, allowing return privilege. Not one was returned in 1911.

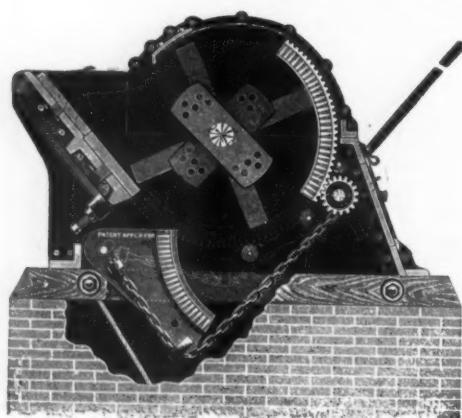
Address

SYMONS BROTHERS COMPANY, Majestic Building **Milwaukee, Wis.**

WILLIAMS JUMBO CRUSHER

Will take 12 to 14 in. cubes Limestone or Shale and reduce to 2 inch,— $1\frac{1}{2}$ inch,—1 inch,— $\frac{3}{4}$ inch and finer.
1 No. 6 Recently Replaced 3 No. 5 Gyratories.

"MANUFACTURED AND LICENSED UNDER 87 SEPARATE AND DISTINCT PATENTS."



WITH DUMP CAGE OPEN.

WORKS: 2701 N. Broadway, ST. LOUIS
SAN FRANCISCO, 347 Monadnock Bl'dg.

Iola, Kansas, December 6th, 1910
Williams Patent Crusher & Pulverizer Co., St. Louis, Mo.
Gentlemen: Your No. 6 Jumbo Crusher recently installed by us is handling about 100 tons per hour of crushed limestone from a No. 8 Gyratory Crusher, the largest pieces of which will average six inch cubes.
The capacity of our elevator is 115 tons per hour and the machine easily overloads the elevator. We are now installing an elevator of double the CAPACITY FOR THIS CRUSHER. Your guarantee was fifty tons per hour from this machine.
Your crusher reduces all of our material to three-quarter inches and finer, and the majority to one-quarter inch.
We have been operating the machine about eight weeks and find same most satisfactory.
Yours very truly, THE IOLA PORTLAND CEMENT CO., F. L. WOODS, Supt.

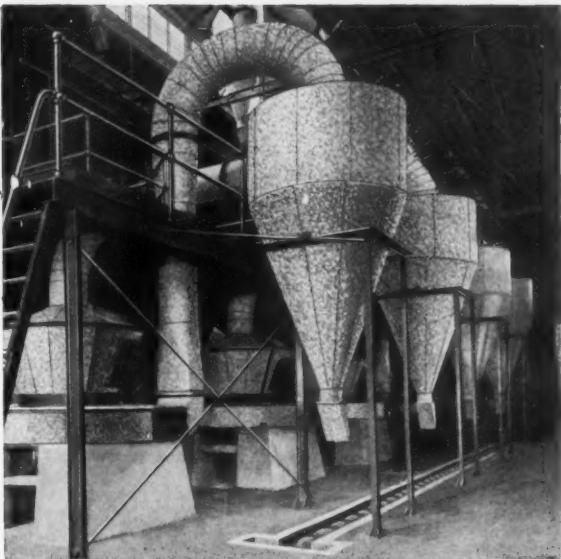
MADE IN 8 SIZES—ALL PARTS ADJUSTABLE

Ask Iola Portland Cement Co., Texas Portland Cement Co., Southwestern Portland Cement Company,—or us. Write for Bulletin 12.

WE ALSO MAKE LIMESTONE GRINDERS

**THE WILLIAMS PATENT CRUSHER
& PULVERIZER COMPANY**
OLD COLONY BL'DG.—CHICAGO

The Raymond is the Only Dustless Pulverizing System



The Federal investigations of the number of deaths caused from occupational diseases will some day result in stringent laws designed to better conditions under which human beings are now compelled to work.

In the grinding rooms of many plants operating antiquated pulverizers the air is so thick with dust that men cannot remain in them but for short periods of time. Diseases of the throat and lungs are the result and then premature death.

To grind any product to the finest mesh, to have it always uniform in fineness and at the same time to keep your grinding room free from dust adopt the

RAYMOND PULVERIZING AIR SEPARATING SYSTEM

and you will get the greatest efficiency for the least cost in power and maintenance. No system does all the good things which this system performs.

Adjust the mill to the degree of fineness you require and then as fast as the material reaches this fineness it is automatically taken from the mill by the special Raymond Air-Separating System. All the powder is kept within the system—none escapes to choke or poison the workmen.

You should investigate the Raymond System and learn of the work it is doing in large plants in many different industries.

Raymond Pulverizing Systems are designed by our Engineering Specialists, who fit them to conditions existing in your plant. They are installed with our absolute guarantee that they will do the service we claim or the sale is not made.

SEND FOR OUR BOOK "I," which explains in detail what our system is and how and where it may be used. Read this book and you may find the way to divert some items from the expense account into the dividend account.

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products.

We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

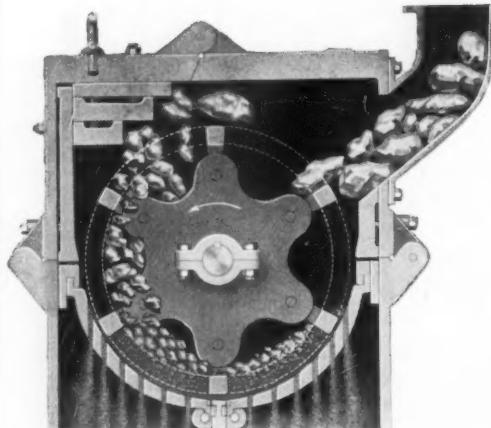
**Raymond Bros. Impact Pulverizer Co.
517 Laflin St., CHICAGO, ILL., U. S. A.**

PLEASE CUT THIS OUT

Reminder

To write Raymond Brothers Impact Pulverizer Company, 517 Laflin Street, Chicago, for their Book "I" on Modern Methods of Pulverization and Air Separation.

The Gardner Crusher



OUR NEW MODEL

**Ask For
Catalogue**

MR. LIME MANUFACTURER:

Here is a letter which speaks for itself about the work of our machine on LIME

March 5th, 1912.

To Gardner Crusher Company,
New York City.

Gentlemen:

In reply to your letter of March 1st, would say that we are very well pleased with the Gardner Crusher.

On burned lime we are crushing about five tons per hour and getting a product about as follows:

Through 20 and on 40 screen ..	25%
Through 40 and on 100 screen ..	50%
Through 100 ..	25%

The Gardner Crusher shows no signs of wear and does the work of higher priced machines with less than one-half the power.

We enclose sample of the crushed lime.

Yours very truly, CHESHIRE LIME MFG. CO.

The above is only one of many testimonials

Gardner Crusher Company
556 West 34th Street New York

HERE'S THE MACHINE

that manufacturers and contractors who visited the Chicago Cement Show are talking about

THE NEW JEFFREY VIBRATING SCREEN

which is now being placed on the market.

This machine gives the closest separation ever obtained from any type of Vibrating Screen. Not more than 2% to 5% remains in the tailings, when ordinary materials are used. Even closer separation results if the feed is not forced.

The Driving

Mechanism is such that the blows causing vibration may be delivered on top or bottom, or alternately on top and bottom of the screen—a distinctive feature in the JEFFREY VIBRATING SCREEN.

Guaranteed to give a large capacity and uniform product.

Write for our Catalog 69-D and complete information and details.

JEFFREY MFG. CO., Columbus, Ohio

New York
Boston
Montreal

Pittsburgh
Charleston, W. Va.
Atlanta, Ga.

Birmingham
Chicago
St. Louis

Denver
Seattle
3-1-12.



CAN YOU PUT THIS

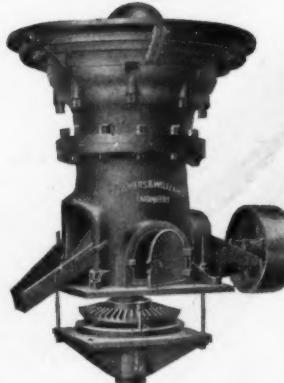


IN HERE

in your crusher
and
have
it

COME OUT HERE

without injuring your
crusher?



If not, write us about our Bronze Ball Gyratory Crusher and let us tell you what one operators experience was in letting a large sledge hammer go through his crusher.

Ask for catalogue L 1.

CHALMERS & WILLIAMS

General Office and Works
Chicago Heights, Ill.

New York Office
Singer Bldg.

Tell 'em you saw it in ROCK PRODUCTS

If acceptance as the universal standard in all civilized countries signifies pre-eminence;

If use in all industries to which they are adapted means reliability;

If more of them in service than those of all other manufacturers combined guarantees satisfaction;

If such facts have any weight with you in your selection of apparatus;

Then you cannot fail to realize the advantages which Gates Breakers have for your crushing service. We can substantiate every claim as evidenced by over 7000 in use.

**COMPLETE CRUSHING PLANT EQUIPMENT
FROM THE POWER HOUSE TO THE BINS**

Allis-Chalmers Company
Milwaukee Wisconsin



AUSTIN GYRATORY CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

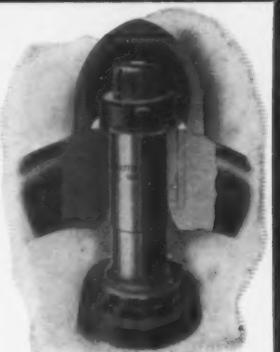
Plans and specifications furnished for any sized plant. Send for Catalogue No. 17.

All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.

Austin Manufacturing Co., Chicago
Musson Ltd., Montreal, Can., Canadian Sales Agents.



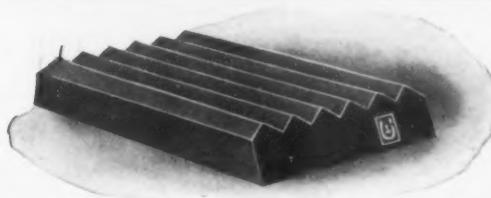
New York City Office
1682 FULTON BUILDING
Hudson Terminal

TISCO MANGANESE STEEL CASTINGS

Quick Service Prompt Deliveries

SEND US YOUR ORDERS

Taylor Iron and Steel Co.
High Bridge, New Jersey



TITAN MANGANESE STEEL

Unequalled for wearing parts of Jaw Crushers, Gyratory Crushers, Cement Machinery, Coal Breaking Machinery, Steam Shovels and Dredges. Send us your inquiries.

TITAN STEEL CASTING CO.
NEWARK, NEW JERSEY

CHICAGO
RICHMOND

SAN FRANCISCO
BOSTON

TRUE MANGANESE STEEL CASTINGS

MANGANESE CHAIN LINKS Outwear cast links of other material



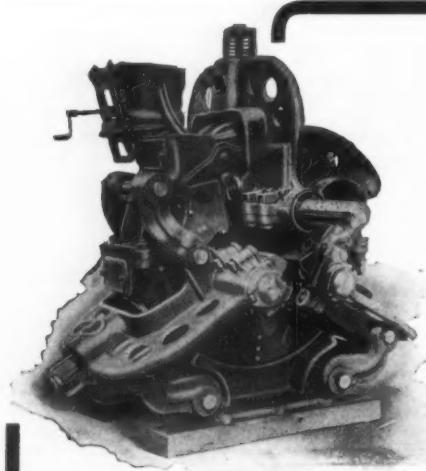
Write for list of users of our castings in your vicinity.

Also Open Hearth Steel Castings and Alloys: Vanadium, Chrome, Nickel, etc.

AMERICAN STEEL FOUNDRIES

New York Pittsburgh Chicago St. Louis

Tell 'em you saw it in ROCK PRODUCTS



MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT
for this achievement**

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co. Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

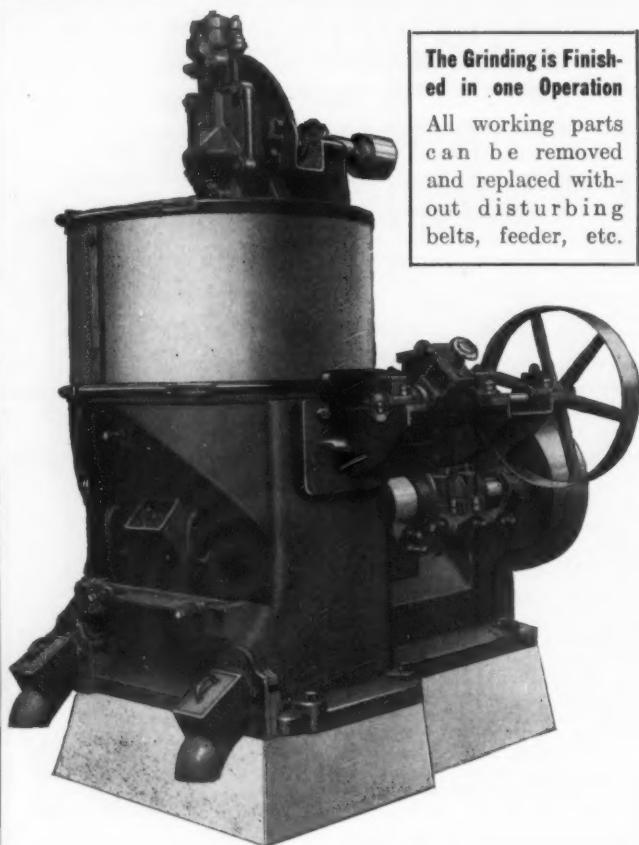
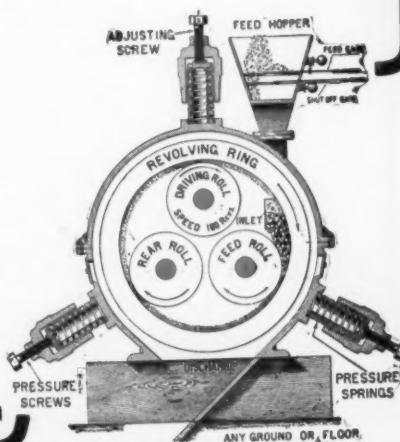
THE RING WOBBLIES

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

KENT MILL CO.

170 BROADWAY, NEW YORK CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

BONNOT PULVERIZER

**Grinds and Screens Limestone,
Raw Lime and Hydrated Lime**

Does it at One Operation. Gives You Any Desired Fineness

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

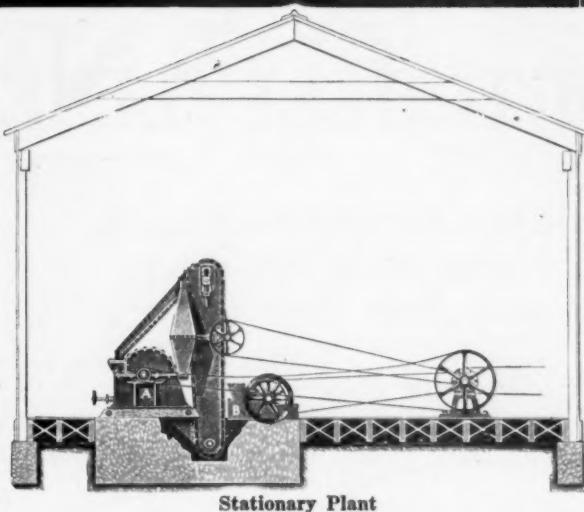
NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

THE BONNOT COMPANY

909 N. Y. Life Bldg.
KANSAS CITY, MO.

CANTON, OHIO



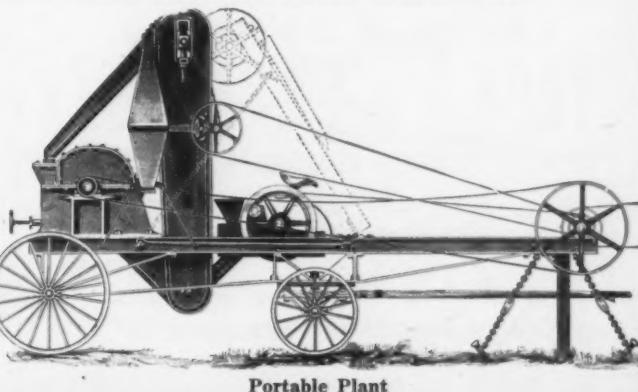
Stationary Plant

Get Into the Game

**GRIND YOUR LIMESTONE SCREENINGS
AND MAKE LIMESTONE FERTILIZER**

**What Is Now a Dead Loss to Some Quarrymen
Can Be Turned Into Good Profits**

WE FURNISH COMPLETE PLANTS OF ANY CAPACITY DESIRED
Manufactured and Licensed under 87 Separate and Distinct Patents



Portable Plant

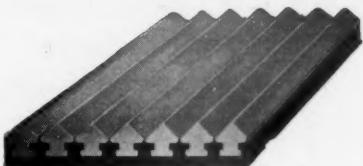
We now have over 30 plants in operation

BULLETIN NO. 4 EXPLAINS THE
PROPOSITION

**The Williams Pat. Crusher &
Pulv. Co.**

ST. LOUI 2705 N. Broadway
CHICAGO: Old Colony Bldg.
SAN FRANCISCO: 428 Monadnock Bldg.

**A Tempered Steel Jaw Plate
for Blake Type Crushers**



Canda Tempered Steel Crusher Jaw Plate

Patented March 31, 1908

CHROME STEEL WORKS
CHROME, N.J., U.S.A.
FORMERLY OF BROOKLYN, N.Y.

The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers. The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc. Our products in this line are sold with our special guarantee that they will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.

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FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK

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Brick and Cement Machinery

meet all the requirements
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has shown to be essential.

Quotations promptly submitted from your
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The Standard by which all Other Brands are Measured

A safe, dependable product. Dealers who handle it are bound to have the best plastering trade on their books. May we send you a quotation?

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As a result, thousands of contractors will use no other. They have learned by experience that it more closely approaches perfection than any other lime, because there is absolutely no waste.

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1. A High Calcium Lime.
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 Lime, Cement, Plaster, Hair, Etc., Etc.

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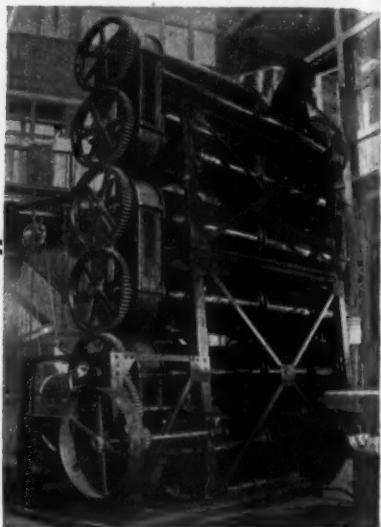
A dealer wanted in every city to handle our products. Write or wire for prices.

THE SCIOTO LIME AND STONE CO., Delaware, Ohio

HYDRATED LIME

Bulletin No. 43

The Government Lime Statistics for 1910 have just been issued. According to this report the quantity of lime manufactured in 1910 was less than that produced in 1909, while the quantity of Hydrated Lime manufactured showed an increase of more than 50%. This shows the drift of the lime business. What evidence could be more convincing?



KRITZER CONTINUOUS PROCESS

You Will Eventually Establish a Hydrating Plant Why Not Do It Now?

We can prove to you positively that by so doing,
Your sales will be increased.
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Your overhead expenses will be less.
Your product will always be perfect. We guarantee
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You will have every dealer praising your product.
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The cost of installation is not heavy. Let us give you prices.

Every concrete worker can do Better Work.
Every concrete worker can do More Work in Less Time.
He will make More Money and hence will wish to use
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The work will be Impervious to Moisture.
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in every instance.

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98 per cent of all the ideas used in Hydrating Lime
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**An Absolutely Perfect Product, Positively As-
sured by this Process.**

A Bond Behind Every Guarantee.

It takes several months to install a plant.
Why not take this matter up with us **Now** and get
ready for business as soon as possible?

The Kritzer Company

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You Lose Money Every Day with a Poor Lime Kiln

A cheap, poorly designed lime kiln burns up good money every day.

Its black smoke represents wasted fuel. In a year or so enough fuel value goes out of the top of a poor kiln to pay for a high-class, money-making Doherty Kiln.

In a Doherty Kiln every available unit of heat is used in burning lime. In other words, you get your money value out of the fuel you pay for.

And while you are saving money by saving fuel, you will be making money by turning out a better grade of lime and more of it with a Doherty Kiln.

A "cheap" lime kiln is a wasteful extravagance. A Doherty Kiln is a money-making investment. You'll understand why after reading Bulletin No. 4.

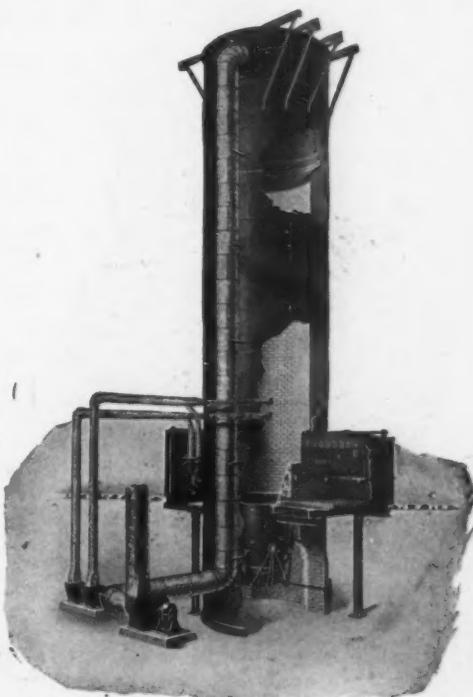
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IMPROVED EQUIPMENT CO.

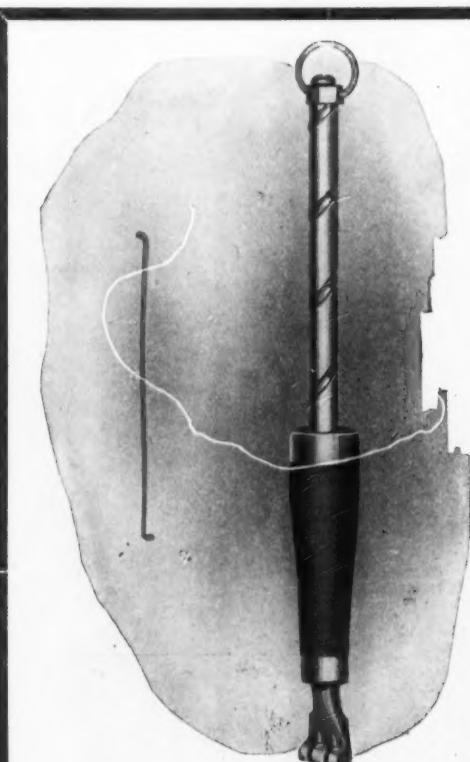
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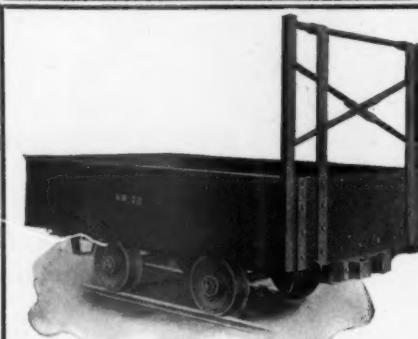
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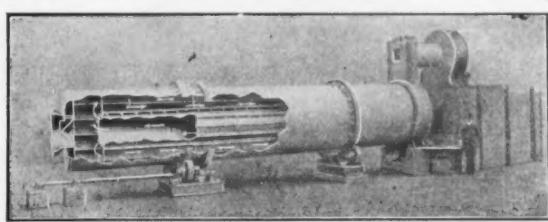
Carefully designed and built to give the longest and most satisfactory service under the severest exactions of quarry usage. There is an Industrial Car for every purpose and each is the best of its kind to be had.

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FOR drying gypsum and sand. In a recent test at a plaster company the Ruggles-Coles dryer showed an efficiency of 81.1%. Here are a few of the many installations in plaster works.

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Ruggles-Coles Dryers are also built to dry cement rock, clay, marl, chalk, coal, organic materials, etc., etc. Over 14 years experience makes us capable of drying anything.

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**EXPLOSIVES**

Increases Production and Reduces Cost

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25,000 OFFICES IN AMERICA CABLE SERVICE TO ALL THE WORLD

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RIVERTON VA JAN 25-12.

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RIVERTON LINE CO

1135-P.M.

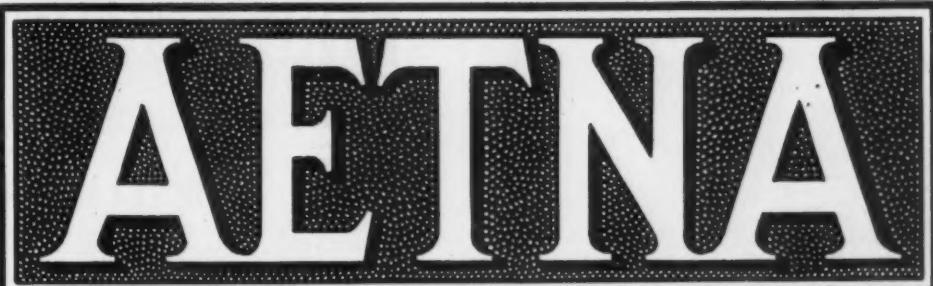
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All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

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68 William Street, NEW YORK CITY



Stained with Cabot's Waterproof Cement Stains and Creosote Shingle Stains
Brocklesby & Smith, Architects, Hartford, Ct.

Artistic Concrete Coloring

The only colorings for cement work that are soft, harmonious and artistic; that do not cover the surface over with a thick, opaque coating, are

Cabot's Waterproof Cement Stains

They are also durable, permanently waterproof, economical and easy to apply. They preserve the natural texture of the concrete and cannot crack, chalk or peel, but grow softer and more beautiful with age.

Send for Samples and full information

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MEDUSA PRODUCTS
WHITE PORTLAND CEMENT

The first true White Portland Cement ever manufactured.*

WATERPROOFING

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Makes Concrete impervious to water and gives absolutely permanent results. Not a wash or an experiment.

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Ordinary Gray and White Portland waterproofed with our famous Waterproofing and ready for use.

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ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.
DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume XI.

CHICAGO, MARCH 22, 1911.

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Seventh Floor, Ellsworth Bldg., 537 South Dearborn St., Chicago, Ill., U. S. A.
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Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

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In the United States and Possessions and Mexico.....	\$1.00
In the Dominion of Canada and all Countries in the Postal Union.....	1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.	
Advertising rates furnished on application.	

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The Associations have all held their annual meetings and all the Cement Shows have been held. Now what will be the result? It is up to Mr. Retailer and Mr. Manufacturer.

Readers of ROCK PRODUCTS should bear in mind that our inquiry bureau is always at their service, especially with reference to equipment or supplies that they are going to need during the season. We are in a position to advise them on these matters to their advantage.

Although much has been said about the many and varied uses of lime, you will be surprised to note in this issue of ROCK PRODUCTS how really extensive its use is. One cannot help forming the conclusion that lime is to the building material world what quinine is to the medical world.

This issue of ROCK PRODUCTS, containing a full report of the National Association of Cement Users and the two great Cement Shows of Chicago and Kansas City, goes to a larger number of interested subscribers and readers generally than any other building material paper published.

Every retailer ought to have on his desk the latest literature of the hard wall plaster companies, so that he will have at his tongue's end the selling points, and thus increase his business in this line. Developments are coming thick and fast on hard wall plaster in the way of specialized forms manufactured of plaster for ready construction.

It behooves every retailer and manufacturer of building materials to make the most of the months preceding the commencement of the great National political fight, because the public mind generally will be engaged in that contest after June. Let's get business out of the way first. Judging from the amount of materials contracted for, and the machinery sold at the Cement Shows, there is to be no let-up in the amount of construction work this year.

The lime men, and that includes every retailer, appreciate the efforts we are making to spread the knowledge of the varied uses of lime. The article in this number on that subject is one that every man who sells lime should carry in his pocket or commit to memory, for many undoubtedly will be astounded at the wonderful versatility of this useful product. It would seem that almost everything worth while has more or less lime in it. Read the article and you will see.

The members of the National Association of Sand & Gravel Producers will be pleased to know that their association has been recognized by the National Association of Cement Users, whose committee on aggregates will soon communicate with the gravel association's committee on standard sizes, with a view to getting together on this subject. Both the cement men and the gravel men realize the feasibility and wisdom of creating standards of uniform grades.

The first Clay Products Exposition held at the Coliseum, Chicago, March 7-12, under the auspices of the International Brick and Clay Products Exposition Co., was a tremendous success and the public who attended the exposition now have a wider knowledge of the possibilities of brick construction than they formerly enjoyed. It was a notable contribution to the general boost of building materials, in which ROCK PRODUCTS heartily joins, because there is room for all in the building world.

It is hard for us to estimate the scope and extent of the influence that have been exerted by these Cement Shows at New York, Chicago and Kansas City. These shows have been attended by legions of men who have gained their first comprehensive knowledge of concrete construction from what they saw there. Much has been said and written about the educational value of the cement show, and it is certain that this value cannot be over-estimated. Results will show in the weeks to come, in the increased orders and new business that will result from these exhibitions. They were held at a season of the year when people were planning on their building operations for this year and cement ought to profit from what the layman has learned.

The popular demand for concrete roadways is sweeping over the country. It filled the atmosphere at Kansas City, and from many sections now come reports that this city or that is planning to put in a number of miles of concrete roadways. Road Commissioners, County Supervisors, City Engineers, Aldermen and all others who have to do in any way with road building have become interested in this subject. The old-fashioned method of building roads for today is giving place to the new policy of building roads for the next century. City, County State and National Officials see now that their obligation is not only to this generation but to the generation still unborn. Hence the Concrete Road. It is gratifying to know that this publication was the pioneer in advocating such construction and to know also that its suggestions are being followed in many sections. Attention is called to the work that is being done by the National organization and every reader should keep informed as to the developments that will come in the next few months along this line.

The eighth annual convention of the National Association of Cement Users at Kansas City, Mo., was the most important and fruitful meeting of that organization ever held. It is to be regretted that the attendance was not larger, for there was something on the programme to interest every man who uses cement. The work this association is doing under the guidance of the president and his staff of technical committees is pioneer work. They are blazing the way for others to follow who want to do intelligent and honest work with concrete. That was the purpose of the organization, and it is hewing to the line. This publication endorses the work of that organization just as it does of societies devoted to other lines of building material who are likewise striving for the highest excellence in construction. This association has no more patience with poor cement or concrete work than has any other organization—in fact, it has less patience with poor construction. It condemns everything dishonest or faulty and aims only at the best. Consistent with this idea, examples of great construction work in various parts of the world were explained in detail and pictures were shown on the screen illustrating the methods of construction, and the lesson of every paper read and every picture shown was "Go thou and do likewise."

EDITORIAL CHAT

Some of the railroads have taken up the cudgel on behalf of the good roads movement. They see that the betterment of roadways makes it easier for shippers to get their goods to freight houses, both from short and long distances.

One of the pioneers in this movement among the railroads is the Southern Railway System, whose industrial department is at Washington, D. C. They have started in on an educational campaign by issuing a leaflet showing the pictures of roads along their lines that have been improved and the story they tell is one of increased business due to this road improvement alone. When a railroad makes it easier for the producer to get his goods to market, it amounts to the same thing in principle as the action of the retail merchant in the sweeping of the snow in front of his store to make it easier for customers to come in.

Investigation of the Portland cement resources of Illinois is being used by Governor Charles S. Deneen in his campaign for re-election. He is also making reference in his speeches to the reports on fire clay paving, brick clay, and other subjects of that character. In his recent speech at Alton, Ill., he says: "A report on the Portland cement resources now in the hands of the printer presents the field and laboratory results from several hundred samples of limestone and clay materials, collected from all parts of Illinois since the organization of the survey. Many favorable points for the location of new plants are pointed out; and the controlling factors which will make for success or failure of such plants are completely outlined. There can be no doubt that this industry will expand enormously, in view of the fact Illinois production has almost trebled since 1905; and it is evident from work by the survey that the resources within our borders will enable Illinois to take front rank."

J. G. Tucker, secretary of the Chattanooga Paint Company, was met in Cincinnati last week returning home from a four-weeks' trip. He stated that he had been through the middle western states and had made more sales than on any trip through the same territory in past years. His factory is running night and day and Mr. Tucker is feeling in fine fettle.

Referring to the departure of Harry L. Holbrook from the city, the Des Moines (Iowa) Capital says: "Harry L. Holbrook, traveling representative for the Iowa Pipe and Tile Company, of Des Moines, for three years, has gone to Marshalltown, where he begins his duties as sales manager for the Marshalltown Sewer Pipe and Tile Company, a new concern which has just begun to manufacture its products. Mr. Holbrook will have entire charge of the sales department. His new position is a recognition of his success. Des Moines boosters know Mr. Holbrook as an able business man and a teller of Scotch stories in the same claps with Harry Lauder. He is well and favorably known to the pipe and tile trade throughout the state. Prior to his connection with the Des Moines concern he was with the Lehigh Pipe and Tile Company, of Fort Dodge."

Nathaniel Weise, one of the oldest members of the New York Builders' Exchange, died at his home, on March 11th, 1230 Madison Avenue, New York City. Mr. Weise joined the Exchange on May 13, 1886; he was greatly respected and held in high esteem by every one in the building material line. The funeral was held on March 12 and interment was at Woodlawn Cemetery.

John T. Rittman has resigned his position as superintendent of the Lovington Coal Mining Company, of Lovington, Ill., and will devote his time to the management of the Lovington Concrete Company, which operates a concrete block factory.

Charles H. McNider, of Mason City, Iowa, who was elected president of the Southwestern States Cement Company at its recent meeting in Dallas, Tex., is president of the First National Bank of Mason City, the third largest bank in Iowa. This in addition to his acting as president of the Northwestern States Portland Cement Company.

DEATH OF PROMINENT CEMENT MANUFACTURER.

It is with extreme regret that we observed the death of David D. Drummond announced in the Chicago press of March 9th.

Mr. Drummond was one of the early cement manufacturers in the middle west, his connection with the Chicago Portland Cement Company, of which he was latterly vice-president and manager, dating back fully thirteen years.

An enthusiastic and untiring worker, Mr. Drummond was always a prominent figure at the meetings of the Association of American Portland Cement Manufacturers, and during his entire lifetime he was actively interested in the work of the National Association of Cement Users and kindred bodies.

For the past few years he experienced very indifferent health and was occasionally compelled to sojourn in the South. Recently his health showed some improvement, admitting of a brief trip to the Panama canal, while his presence at the recent Chicago Cement Show was very gratifying to his wide circle of friends.

Born in Scotland, Mr. Drummond lived in this country since boyhood. He died in his fifty-second year and is survived by a widow and three sons, Douglas, Ralph and Kenneth.

The funeral service was held at the residence of Norman D. Fraser, 1928 Washington boulevard, Chicago, the Rev. E. J. Ridings, of the First Congregational Church, La Salle, Ill., officiating. Interment was at Rosehill cemetery, Monday, March 11th; the pallbearers being J. U. C. McDaniel, Herbert S. Turner, D. Ross Fraser, J. H. McGill, F. H. Cull and R. Crawford, all of the Chicago Portland Cement Co.

M. Stuart Smith, cementologist, Dallas, Texas, has accepted the chief chemistship of the Superior



THE LATE DAVID D. DRUMMOND.

Portland Cement Company, Ltd., Orangeville, Ontario, Canada. Mr. Smith's experience in the Portland cement industry covers a period of ten years, five of which he held the chemical directorship of the Marquette Cement Manufacturing Company, La Salle, Ill. He also served in the chemical engineering department of the Lawrence, Alpha and Atlas Portland cement companies of the famous Lehigh district.

OBITUARY.

Imlah M. Green, a retired contractor of this city, was stricken with apoplexy while in an elevator in the Real Estate Trust Building, February 22, and died shortly after being taken to the Jefferson Hospital. He was 69 years old.

James F. Curran, contractor, died February 23. Mr. Curran worked his way up from a cart driver to a city contractor, and amassed a fortune amounting to \$250,000. He was 47 years old.

Elias Flowers, builder, Florin, Pa., aged 84, died February 21.

Daniel W. Brown, contractor and builder, Wenvannah, N. J., died at Palm Beach, Fla., February 27. He was 68 years old.

Announcement is made that F. E. Guy has been appointed assistant eastern traffic manager for the Universal Portland Cement Co., with offices in the Frick building, Pittsburgh, Pa.

History Makers of the Building Material Industry

One of the aggressive men in the handling and distributing of building material in the West is G. J. Parke, secretary of V. H. Parke & Son Company, Decatur, Ill. Guy Parke is well known among the building material people of the central West, having started in with his father in the business at Decatur in 1887. They have been aggressive distributors in central Illinois since that time.

He was one of the first men to join in the organization and building up of the National Builders' Supply Association and no meeting of that organization is considered complete without his presence. Their plant at Decatur comprises a complete exhibition room, showing the types of goods handled by them, which includes face brick, terra cotta, Keene's cement, plaster board, roofing, white sand, hard wall plaster, fireproofing, damp proofing, paints, lime, coal, sewer pipe, firebrick and even vacuum cleaners.

Guy Parke is not only a live retailer of building supplies, but he is aggressively interested in his home city, being identified with most everything that is worth while in Decatur. He is also known as a great pal of his wife, despite his business activities, and in his rush and bustle in attention to affairs he never loses sight of his home. Once in a while he takes a vacation that includes a trip to the seashore or to some metropolitan city like Paris, Illinois, or Chicago, but most of his time is spent manipulating his growing business. He is not only engaged in selling materials for building, but he believes in his business. Maybe that is the reason why he has succeeded, for when you talk shop to him you cannot help being convinced. He is aggressively in sympathy with every legitimate movement for correcting the evils, whatever they are, existing in the craft. He is against the Sherman Law; he wants a new lien law. He is for auto trucks; he wants to make the N. B. S. A. bigger; he is in favor of display rooms; in fact, he is in favor of everything that the live dealer wants.

If we may be pardoned for mentioning the matter, he is also the Beau Brummel of the craft, for he sets the pace for all members of the National Builders' Supply Association in the style of his clothes. Everybody watches to see what Parke is going to have on before they buy.

He also plays golf.

When he was born, it is impossible to tell, but he is said to be somewhere between the ages of 21 and 72. At any rate he was on earth at the time of the organization of the first builders' supply association of Illinois, for he assisted the other members of the ROCK PRODUCTS business family at the birth of the infant.

The picture that adorns this issue of ROCK PRODUCTS is the only one he ever had taken. He has no knowledge that it came into our possession; in fact, it was stolen out of a bureau drawer in his house. What will happen when he sees it is hard to say, for he is one of those fellows who is always thinking of what he can do for somebody else, but when it comes to saying anything about himself, he is silent.

DEATH OF RALPH PEVERLEY.

It is with deep regret that we have to chronicle the death of Ralph Peverley. While he had been ailing for some time previous to his departure from New York City for his camp in Canada, it was thought that with his magnificent constitution he would be able to return restored to health.

Ralph Peverley was one of the pioneers in the cement business in the United States. He was one of the first men to import cement into this country and he was known at one time throughout the United States wherever cement was used.

Mr. Peverley was a noble hearted gentleman of the old school, and while possessed of a somewhat brusque manner at times, those who knew him intimately found him endowed with a warm heart and a willingness to help his fellow-man, which endeared him to a wide circle.

Mr. Peverley resigned his position as Eastern manager of ROCK PRODUCTS owing to his failing health, but few people believed that his trip to San Souci would be the last. The immediate cause of his death was heart trouble. The end came peacefully March 3. His wife was with him at the time. Camp San Souci is near the Inlet post office in the Province of Quebec, Canada.

Harry Holt, who has charge of the rental department of the F. E. Stiteley Company, at Dixon, Ill., became connected with the Sandusky Portland Cement Company March 15.

FLOWERS FOR R. L. HUMPHREY.

Richard L. Humphrey, president of the National Association of Cement Users, was confined to his room at the Baltimore in Kansas City by illness. This fact became known at Convention Hall and at once the human element of the show became evident. Gerson Isenberg took off his hat and started around among the exhibitors with the one phrase, "President Humphrey's sick; boys. Come across for flowers." In an hour after visiting each booth he had a hat half full, enough to keep President Humphrey's room loaded till he was well.

The money was turned over to a representative of the Alpha Floral Company, with instructions to keep Mr. Humphrey supplied with flowers each day. A letter, of which the following is a copy, was sent to the sick room:

"Richard L. Humphrey, Baltimore Hotel—Dear Sir:—The exhibitors at the Cement Show have learned with deep regret of your illness. In the midst of the rush and turmoil of the show engaging our attention you have our full sympathy. We trust you will soon be restored, and if it shall be that you cannot be with us before the exhibition closes, please accept the flowers that will come to your room each day as a token of our regard. They but slightly express our appreciation of you, both personally and as the executive head of the National Association of Cement Users.

"P. Austen Tomes,
"L. V. Thayer,
"A. G. Higgins,
"Gerson Isenberg,
"For the Exhibitors."

This act on the part of the exhibitors was done simply, quickly and with genuine zest characteristic of good fellowship. They all felt that they would leave Kansas City before Mr. Humphrey went, but they left behind them a trail of flowers that was with him till he departed for Philadelphia.

OH, YOU BEAUTIFUL DOLL.

Buying a doll is attended with difficulties in Kansas City, as P. Austen Tomes, the publicity manager of the Atlas, will attest.

Mr. Tomes wished to take home to his little girl a big doll and with the best of intentions went over to one of Kansas City's big department stores and asked one of the young lady clerks innocently: "Where are the dolls?"

The young lady, unable to contain her feelings, burst out laughing in Mr. Tomes' face, and then seeing that he was in earnest, she referred him to the chief floorwalker.

That gentleman listened patiently and then said: "Dolls, yes dolls, we have plenty of dolls," and then, as an afterthought, "Oh, you want to buy a doll. They're on the sixth floor."

Going to the sixth floor he met one of the young lady clerks and asked her politely:

"Where are the dolls?" She started giggling at once, but when she saw that Mr. Tomes was visibly affected and embarrassed, she calmed herself and answered with as straight a face as she could command:

"Oh, you want a doll."

"Yes," Mr. Tomes answered icily, "I wish to purchase a doll."

"Dolls!" shrieked the girl, "Dolls!" and immediately all the sale girls rushed up.

Mr. Tomes blushed furiously.

"I only want one."

"This way, please," and Mr. Tomes was finally led over to the doll counter, while a hundred eyes were turned regretfully in his direction.

Mr. Tomes got the doll.

The Bonacci Contracting Company, Inc., of Brooklyn, N. Y., has been incorporated with a capital stock of \$30,000 to carry on a contracting and real estate business. The incorporators are D. Bonacci, M. J. Kennedy, Brooklyn, N. Y., and W. W. Smith, of New York City.

The Becker Construction Company, of Newark, N. J., has been incorporated to do a general building and contracting business with a capital stock of \$100,000. The incorporators are H. Hoppe, J. Becker and J. L. Becker, all of Newark, N. J. To manufacture brick, pottery and clay products.

F. S. Bruen Lumber Company, of Newark, N. J., has been incorporated to deal in building materials and lumber with a capital stock of \$35,000. The incorporators are F. S. Bruen, of East Orange, N. J., H. A. Schuermann and J. I. Lundy, of Washington, N. J.

The Clark Coal & Brick Company has been organized by Charles B. Clark, Campbell Jones and Alexander Fleming, of Butler, Pa. It will have a mining plant in Butler county.

WASHINGTON NEWS

WM. B. BARR, WM. WOLFF SMITH, E. H. PULLMAN
Contributing Editors

722-723 Southern Building, Washington, D. C.

OUR WASHINGTON BUREAU.

The National Government is in such close contact with every line of business that a reliable source of information located at the Capital is everywhere regarded as invaluable. ROCK PRODUCTS maintains at Washington a fully equipped and highly efficient news and information bureau located in the heart of the business and financial district and convenient to the government departments. Our patrons who may wish to be privately informed will find our Washington Bureau prepared to serve them promptly and efficiently by mail or wire. Charges are consistent with the character of the service.

The field covered includes: Congress, the U. S. Supreme Court, Court of Commerce and other courts; the Interstate Commerce Commission and other commissions, and all Government Departments with their various bureaus and branches.

Our patrons are invited to make our bureau their headquarters while in Washington and avail themselves of our facilities.

Inquiries may be addressed to ROCK PRODUCTS, or to its Washington Bureau, Rooms 722-723 Southern Building, Washington, D. C.

Washington, D. C., March 20.—The following order has recently been issued by the Interstate Commerce Commission at their general session held in Washington, D. C. The order concerns the rates on cement, and the application was made by the Southern Pacific Railway Company for relief from the fourth section of the act to regulate commerce.

This application, No. 5879, made January 11, 1912, asks for authority to establish a rate of 25 cents per 100 lbs. minimum 50,000 lbs. on cement, carloads, from El Paso, Texas, to San Bernardino, Colton, Riverside, Los Angeles and San Pedro, Cal., and points between said stations, lower than rates currently in effect to intermediate points.

The application was denied by the commission.

At a recent session of the Interstate Commerce Commission the following order was issued concerning rates on cement.

The application was made by the Western Maryland Railway Company and other carriers for relief from the fourth section.

This application, No. 5660, was made November 3, 1911, and asks for authority to establish rates on cement in carloads from Union Bridge, Md., and Security, Md., to stations on the B. & O. R. R., on the basis of 50 cents per ton less than from Lehigh Valley District and York, Pa., to destinations referred to, as set forth in the said tariff, without observing the provisions of the fourth section.

The application was based on the desire of the petitioners to afford cement plants at Security, Md., and Union Bridge, Md., which are practically new points of production, rates on a relative basis with those from producing points situated in the same territory and in close proximity to the said stations, from which the rates do not conform to the provisions of the fourth section.

The application was granted by the commission.

The following order was issued at a general session of the Interstate Commerce Commission held at their offices at Washington, D. C., on February 24, concerning rates on cement.

The application, No. 5864, was made May 29, 1912, and asks for authority to establish rates on the transportation of cement, carload, minimum 40,000 pounds, from Kingsport, Tenn., to various destinations set forth therein, lower than rates to intermediate points.

This application is based upon the desire of petitioners to afford the cement shippers at Kingsport, Tenn., rates that will enable them to meet the competition from other cement-shipping plants. The application was not granted by the commission.

The following cement order has recently been issued by the Interstate Commerce Commission at one of their general sessions held in their offices at Washington, D. C., in regard to application No. 5948, of the Central Railroad Company of New Jersey and other carriers.

The application was made January 26, 1912, asking authority to establish rates for the transportation of cement, common, hydraulic, natural or Portland, and unburnt cement in packages, in carloads, minimum weight 50,000 lbs., except that when the capacity of the car is less, but in no cases will the minimum carload weight be less than 30,000 lbs., from Allentown and other points named on the Central Railway Company of New Jersey and points on other roads mentioned lower than rates concurrently in effect to intermediate points. The application is based on the desire of the petitioners to establish the same rates from said points of origin to Wilson Point, Conn., as are concurrently in effect to South Norwalk and Norwalk, Conn., points in close proximity, which rates are not in accord with the fourth section. The application was granted by the commission.

Hearing.

A hearing was held at Kansas City, Mo., on March 16, 1912, before Special Examiner Mackley, of the Interstate Commerce Commission, I and S No. 68, in the matter of advances of rates for transportation of cement in carload lots from Kansas producing points to points in Nebraska, Wyoming, Oklahoma, Colorado and Missouri.

Decisions.

In the case of the Alpha Portland Cement Company vs. Baltimore and Ohio Railroad et al. the Interstate Commerce Commission goes into an exhaustive consideration of the petition of claimants and in its order establishes a table of differentials to be in effect for two years from the effective date of its order. The case is covered substantially by the ruling following:

I. Complainant operates a cement mill at Manheim, W. Va., 130 miles east of the Buffalo-Pittsburgh line, which divides trunk line and Central Freight Association territories. The Universal portland cement mill at Universal, Pa., within the switching limits of Pittsburgh, is a competitor. Universal is considered as being in trunk line territory, where Manheim also is located, as to shipments east, and in Central Freight Association territory on Central Freight Association shipments. Universal, therefore, on shipments to Central Freight Association territory derives the benefit of the Central Freight Association cement basis adopted by Central Freight Association carriers, which 73% per cent of the sixth class mileage scale for similar distances. Manheim rates to Central Freight Association territory, however, are made upon the old established basis, long in effect between trunk line and Central Freight Association territories, of a certain percentage of the New York-Chicago rate, dependent upon the Central Freight Association percentage group in which point of origin or destination is situated. The present comparative basis from Manheim is the result alone of a strict observance of the Buffalo-Pittsburgh line in rate construction. Upon complaint of unjust discrimination against Manheim; held, Considering the complaint upon its substantial merits from a transportation standpoint, without regard to any arbitrary geographical line of demarcation between different methods of tariff construction, that the relative adjustment between the two mills is unduly preferential to Universal.

2. When general rate adjustments in and between large territories, which contemplate substantial justice between all shippers generally, result in individual instances of disproportionate inequality, they fall in their purpose to that extent, and their strict observance in such cases upon no other ground than the arbitrary theory of their existence should yield to the extent necessary to prevent gross injustice, just as many other general rules are necessarily subject to exceptions.

3. Reparation to be awarded upon satisfactory proof of the amount due under these findings on complainant's shipments within the statutory period.

In the opinion rendered by the commission in the case of Edison Portland Cement Co. v. Delaware, Lackawanna & Western Railroad Company et al. the ruling is as follows:

Following rule 68, tariff circular 18-A, cited and approved in De Camp Bros. & Yale Iron, Coal & Coke Co. v. V. & S. W. Ry. Co., 22 I. C. C. Rep. 274; held, that the principal defendant is responsible to complainant in the amount of damages caused by having unlawfully published a tariff showing that it could make delivery on the track of a carrier from whom it had not obtained concurrence, and which carrier refused to participate in the tariff.

It is ordered, that defendant, the Baltimore & Ohio Railroad Company be, and it is hereby, authorized and directed to pay unto the complainant, Edison Portland Cement Company, on or before the 1st day of April, 1912, the sum of \$12.60, with interest thereon at the rate of 6 per cent per annum from April 12, 1909, as reparation for damages caused by drayage at Akron, Ohio, for two carloads of cement shipped from New Village, N. J., to Akron, Ohio, which damage resulted from the unlawful publication of rates by the Baltimore & Ohio Railroad Company, as more fully and at large appears in and by said report of the commission.

MOTOR TRUCKS.

Paper Presented By Irving Warner at the Annual Convention of the National Builders' Supply Association, Giving Results of Exhaustive Investigations.

At the annual convention of the National Builders' Supply Association in New York one of the principal subjects of discussion was the motor truck. A paper on the subject was presented by Irving Warner giving the results of careful investigation. We take pleasure in presenting it herewith:

In presenting this paper I desire to state that I hold a brief neither from the motor truck manufacturers nor from the building supply trade, and if in the course of my remarks I should bring an indictment against both parties, it is to be understood that the criticism is to be considered as being entirely constructive, with the aim of bringing the two industries together in their proper relationship for their future mutual welfare.

I have had the pleasure of talking personally with many men in the building supply business, and in kindred lines regarding their motor truck experiences, and of going over their records. To them I extend my thanks, and should this paper prove of any benefit in clarifying the situation, let the beneficiaries also show their gratitude by being prepared to give full data in the future on this very important question.

The company with which I am associated has also contributed to the fund of experience, having purchased a 3-ton truck three years ago, following shortly afterward with an order for a second truck. We are not using them now, but through that early pioneer work we became acquainted with the faults of users on the one hand, and the requirements of a first class truck on the other. The experience of those early days and the best methods of use ultimately developed, I find to be quite generally confirmed everywhere.

We have not yet again entered the arena by investing in auto trucks, but it is not altogether unlikely that we will do so if we can figure a profit, for I am now fully convinced that the calculation of whether or not an auto truck may be profitable can be made with scientific accuracy. The old troubles with motor trucks which formed such unknown quantities have now been reduced to reasonably definite amounts, so that the only variable is each individual's local conditions, which he must carefully observe and calculate accordingly.

I will first touch lightly on these items of cost, showing how they enter into the total calculation, and then later endeavor to show their accuracy by evidence I have secured.

One of the most fruitful causes of high expense was that of tire maintenance. This expense may now be accurately predetermined. It is now possible to obtain guarantees of 8,000 miles from tire manufacturers under certain reasonable conditions as to tire sizes. As an example, the tires furnished on a 5-ton truck of prominent make may be replaced for \$488, which figures to 6.1c per mile. Fluctuations in market prices of tires are not likely to vary this mileage cost by more than a negligible amount, so that this figure will be used for our calculations.

Failure to get continuous and reliable service from trucks was the next great drawback, this being coupled with short life. I am glad to be able to say that it is now possible to purchase trucks of capacities of 3 and 5 tons which can be counted on absolutely to give steady service day in and day out without either shop or road delay of any moment. I cannot vouch for the smaller machines. But there must be overhauling at intervals of perhaps 15,000 miles and some minor repairs occasionally, even if it is only a brake shoe or a spark plug, and I believe that the amount given by one manufacturer of 2.5c per mile, 15,000 miles per year, or \$375, can be substantiated in practice. However, I feel that 10,000 miles per year will be a more accurate figure for the building supply truck based upon 40 miles per day, with time out for bad weather, no business, holidays, and overhauls. The reason for this figure of 40 miles daily will be shown shortly. We have all seen old touring cars of five years back of reliable make which are now moving on their duties as steadily as ever. They have probably been rebuilt once or twice. It is now a first practice of many of our best touring car manufacturers to rebuild their old models and put them on the market again with the same guarantee as their new machines. Following this procedure, it will be a rash man who will predict the ultimate life of either truck or pleasure car, and I am fully convinced if the best pleasure car of five years ago is still running, that we can certainly count on six years of truck life under similar conditions of rebuilding.

Suffice it to say that a truck should need rebuilding similar to that given rebuilt touring cars only every second year, or perhaps at eighteen months intervals, at which time most of the repair expense will occur. There should be but little expense in the interim between regular rebuilding periods. Figures that I have gotten on rebuilt touring cars show that this can usually be done for about \$300. This does not include painting or refinishing. No greater expense should be occasioned on the truck. Thus we may set down 2.5c per mile against repairs, but for safety will increase it to 3c.

The depreciation item is tied in closely with that of repairs. I am assured that by rebuilding at regular intervals a truck may be made to last 150,000 miles, but I prefer the more conservative figure of 15 per cent of \$5,000 on a 10,000 mile a year basis, which figures out at 7.5c per mile. This is over twice the depreciation per mile set down by the truck manufacturer.

On gasoline consumption there should be no difficulty, with reasonable care, in averaging better than 4 miles to the gallon on a 5-ton truck and 5 miles on a 3-ton truck, with gasoline liberally priced at 12c per gallon. Item on a 5-ton truck, 3c a mile. Lubrication generally costs 10 per cent of gasoline, or .3c per mile; say .4c to be liberal.

This includes all the operating cost based upon mileage traveled. We must now consider those items which have time for a basis. I will use one day as a unit of costs.

Five thousand dollars should buy and equip a satisfactory 5-ton truck. With interest at 5 per cent and 250 working days, the cost is \$1 a day. Insurance of the four kinds that should be carried—liability, collision, fire and theft—will cost about \$150 per year, or 60c per day. Garaging, including storage, cleaning, charging, minor adjustments, inspection by experts, will be covered by \$25 per month, or \$1 per day.

Now comes one of our most important considerations—that of the driver. I intend to dwell on this length later, but let me state that failure is imminent if an extra man is put on the truck simply because it is power driven. A small extra amount, say 25c or 50c per day to a good driver of teams, will secure the best service. Using as a basis the wages of drivers in my home city, \$2 a day will cover this item. Note that the amounts for garaging and driving are more or less interdependent and it would probably be more accurate to lump these two amounts together so as to cover any method of organization of truck operation, but for clearness in showing every item that enters the total cost, they will be left separate in the table.

Our total per diem cost is \$4.60. This, together with the mileage cost of 20c per mile, forms what I call the known quantities in truck operation in its present status. To figure the cost per ton each man must now study diligently his own local conditions. How long will the truck be in the yard, including delays in getting approximately the correct loading of bulk materials? How long will it take to unload on the job? What is the average haul? Can the truck be kept loaded usually well up to capacity on each trip?

The figures I have set down show a typical condition which in my opinion must be equalled or bettered for successful truck operation in competition with horses. It shows how the minutes count. On this schedule eight trips per day of 10 hours will be secured. The cost figures out to 35c per ton. Allowing 88 per cent efficiency, this is increased to 40c per ton. It is particularly to be noted that this table is not intended to convey to anyone the exact cost of delivery by truck under these conditions, but rather merely to illustrate the method of calculation which may be used by anyone, substituting his own figures for those used and thus attain his own result.

It is incumbent upon each prospective purchaser of a truck to "camp on the job" with a stopwatch and a note book, and ascertain for himself whether he can "make good" with a truck, and the calculation should be repeated many times for various conditions of average speed, length of haul, average load, lost time either in loading or unloading, so as to impress upon his mind the comparative results obtained from different conditions. It is better for him to do this and save a few thousand dollars than to blame the innocent truck manufacturer for his own hasty action and spread the doctrine of dissatisfaction which would discourage legitimate truck sales.

It is a true bill against the average building supply man that he does not get the best out of his truck. Unnecessary yard delays, scattering of different materials when mixed lading are required and, worst of all, a willingness to do anything for the customer on the job, even to carrying the material to the third floor as a little act of courtesy. In my humble opinion it should be one of the most important duties of this organization to discourage these delays at the job. Deliveries at curbstone or to good hauling point without the driver getting off his truck should be the strict rule. Even teams are now too valuable to afford to lose their time. Finally, the present liberal and unnecessary service is economically false, and the extra expense involved must of necessity be added onto the product and be borne by the ultimate consumer. It is a condition of the times that fixed prices immediately result in competition as to service. Therefore let us have fixed services.

To facilitate quick unloading a type of dump body must be used. As yet I must caution against the use of power elevated bodies as being in the experimental stage, being crude, unduly heavy and likely to cause annoying delays. There are several hand dumping bodies which are recommended by the truck manufacturers. These can usually be dumped in five minutes, and are satisfactory when it is sufficient to partially dump and partially pull from the load. I hope to see the power dumping or elevating body in the near future as a natural development, but in the meantime I must discourage their purchase. Nor will it do to have a hand elevating body, by which I mean one that elevates not only the front end of the body, but also the rear end to a lesser extent so as to chute the load to some distance or to dump clear without pulling away. These bodies have been found undesirable in horse-drawn vehicles, not only on account of their great dead weight and liability to frequent repairs, but also because time was lost by the driver in elevating to a considerable height the heavy body and load.

The dump bodies on the other hand are rigid, reliable and comparatively light. Their quickness of unloading is based upon the fact that they are supported by a pivot at a point about one-third from the rear end. Thus this overhanging one-third helps to lift the other two-thirds, the total height of lift is reduced and the only objection is that it is necessary to pull away from the load instead of dumping clear. This feature has been used to advantage in the handling of brick in dumping full loads with little breakage. In fact, one building supply man who is operating trucks advantageously frequently dumps cement bags, leaving a laborer to stack them while the truck continues its trips.

In the course of my investigation I regretted to find that few users kept a full and accurate record either of their trucks or horse drawn wagons. In some cases, records were summed up for the year, but by that time the conditions during the period were forgotten, and no analysis of the cost could be made. Daily operating reports were kept in several cases, and these, when properly and promptly summarized, give valuable information, but in most cases I found that the summaries were not made.

The charge of not knowing the costs of his business is really the most serious one that can be brought against the supply man. Even when truck costs were kept, or averaged up at the end of the year with fair accuracy, teaming costs under similar conditions were usually lacking, so that no comparison could

be made. Mileage records were absent, due either to indifference, but more often on account of deficiency in odometers used.

In going over my data I find that I have run across the extremes in the use of trucks. An owner of a 5-ton truck was making excellent records in the delivery of coal. His daily records showed that the truck was in the yard only from 3 to 15 minutes for loading and weighing. The body used is of the hand dump type, and conditions permitted of rapid unloading. Complete round trips were made hourly, so that while being rushed, the truck was delivering over 50 tons per day. Allowing for all fixed charges, including liberal depreciation, this truck was probably earning at least \$2,500 a year for its owner.

Other truck owners frankly said that trucks could not compete with horses in ordinary work, usually setting the distance hauled one way at not less than 2½ miles, beneath which horses are more economical. One user even put the dividing line at 4 miles. It is to be remembered, however, that this line of demarcation of comparative economy varies with the time lost in loading and unloading. This fact is most strikingly shown in the above reference, wherein the coal deliveries were made with great profit to an average distance of only two miles, simply because of the ability to load and dump quickly. Other data which I have not myself secured corroborates this. In two cases the users found trucks advantageous only in giving better service in hurrying rush orders, in relieving horses of long, hard pulls or in excessively hot weather, but of no actual money gain.

Two other users found they got profitable business which they were unable to get before, and in this way made a direct tangible profit with their trucks. This condition checks with our own experience, namely, that in many cities it is possible to get a suburban business involving hauls up to perhaps 15 miles, in which hauling by auto trucks can often compete successfully with less than carload shipments from manufacturers or local reshippers from a distributing center, showing a handsome profit in addition.

Certainly in two places I found that the trucks were operating at a loss without the owners fully realizing it, though in each case there were extenuating circumstances which probably warrant their further use, but not the purchase of additional equipment.

The reason invariably advanced for the failure of trucks to compete generally with horses, or at least only in the long hauls, is that of delay both in loading and unloading. In one case I attribute the failure to the inefficiency of the machine itself, the others all using trucks of first class make. Thus we get back to the original proposition that I advanced, namely, that it is within each man's power to predetermine with reasonable accuracy whether he can make a truck profitable, and having possessed himself of one, to make it actually profitable. And the broad minded truck manufacturers can help in this study of local conditions. I acknowledge that it takes courage on the part of the truck salesman to refuse to make a sale of trucks where he knows the conditions do not warrant their use. Yet there is already a tendency in this direction on the part of our better manufacturers, and I cannot commend this broad policy too highly, realizing it will ultimately redound to our mutual welfare.

Let us assume that our building supply man has studied his own conditions diligently, and has decided that he can operate a truck profitably. What shall direct him in the selection of a machine? He must be guided by his own conditions as to whether to get only a 3-ton machine, or to spend the greater amount for one of 5 tons' capacity. If he has been accustomed to handling 2 or 2½ tons' load and is in a small community or a hilly country, a 3-ton truck will probably serve his purpose better. Where 3, 4 and 5 tons form the load for teams, then it is likely that he should purchase a 5-ton truck.

The next point is adaptability to the conditions. I have not even considered the electric truck in this discussion, simply because I believe it not to be adaptable to the building supply business on account of its slow speed, low power for pulling through bad roads, limited radius of action and expense of battery maintenance. This is intended to be no reflection against the electric truck in certain spheres of action, in which it seems to be eminently suited. Certain gasoline trucks are especially suited to strictly city work, being of large capacity, slow speed, comparatively small power, built low, with little road clearances under the machinery. Such machines usually have short wheelbases, the machinery driver's cab and the body being concentrated as much as possible. They apparently perform their duties satisfactorily, but would evidently be very unsuited for long suburban hauls or bad roads.

But most important of all, and more important than the mechanical details or system of transmission, is the purchase from a manufacturer who has a reputation to uphold, whether that reputation has been made with touring cars, with trucks, or with both. The willingness of the local agent to give service is also of importance. This can often be determined by investigating his willingness to serve his pleasure car patrons. Having slimmed his choice down to three or four makes, the purchaser will do well to spend \$100 in traveling expenses and several days of his own time in getting personal interviews with at least four users of each of the different machines under consideration. Much will be brought out in such talks which would never be put down in letters, and certainly any man contemplating the expenditure of four or five thousand dollars can afford to spend 2 per cent more as an assurance of spending it properly. And should there be the slightest suspicion that the manufacturer himself or his local agent will not stand behind their machine, then the purchaser is justified in eliminating it from consideration. The purchaser of two and three years ago was obliged to buy on faith, hope and mechanical judgment, but now he should buy on reputation for efficient service and willingness to make good.

But there is one mechanical feature that I desire to speak of; that is the governor, for the purpose of limiting the engine speed. This is usually set to give a speed of 13 miles per hour on the high gear. A treatise can be written on this subject. Suffice it to say that excessive speed is responsible for heavy tire cost and short life of machinery. Therefore I may say emphatically, both from my personal experience and from my observations, that under no circumstances give consideration to any machine in which the governor is not an integral part of the engine itself. The truck manufacturer who puts the governor on the transmis-

(Continued on Page 34.)



Otto Dietrich, of Kerville, Tex., has opened a retail yard at Lytle, Tex.

T. L. Minier has purchased property at Pleasant Hill, Ill., and will open a retail building material yard.

The North-Arnold Lumber Company, of Herrin, Ill., has changed its name to the North-McNeill Lumber Company.

Charles Kahney, who has been manager for the Smith Lumber Company, of Ludlow, Ill., has been made manager for the same company at Lena, Ill.

W. J. Flower is the new local manager at Alliston, Iowa, for the Spahn & Rose Lumber Company, of Dubuque, Iowa, which recently purchased the A. R. Baxter yard there.

The Builders' and Traders' Exchange, of Lima, Ohio, has been incorporated. The incorporators are Laurens Hull, W. O. Dean, W. A. Smith, H. D. Campbell and S. S. Sherrick.

Dealing in building material is one of the aims of the Farmers' Grain Company, of Armiton, Ill., which has been incorporated. The incorporators are W. E. Verry, Frank Pratt and John R. Potter.

The J. P. Hesser Cement and Supply Company, of Lubbock, Tex., has been incorporated with a capital stock of \$5,000. The incorporators are J. M. Mullen, Walter Willmering, J. P. Hesser and H. C. Mercer.

A new corporation at El Campo, Tex., to take over the lumber, hardware and builders' supply business of Mack Webb will be formed by Mr. Webb and others. The store and yard cover a block.

The D. Rixman Lumber Company, of Hoyleton, Ill., has been incorporated with a capital stock of \$60,000 to deal in lumber. The incorporators are Frederick R. Rixman, Wm. C. Rixman and Diedrich Rixman.

William Dunn has purchased the interest of his partner, William Eversole, in the firm of Dunn & Eversole at Essex, Ill. The firm handled building material in addition to doing a coal and grain business.

The H. J. McNichols Company, of Chicago, Ill., has been incorporated with a capital stock of \$5,000 to do building contracting. The incorporators are H. J. McNichols, R. J. McNichols and J. A. McNichols.

The Summers Lumber Company, of Christopher, Ill., has been incorporated with a capital stock of \$15,000 to deal in lumber and building materials. The incorporators are E. G. Summers, T. B. Griffin and T. L. Griffin.

The Geneva Lumber & Coal Company, of Geneva, Ill., has been incorporated with a capital stock of \$20,000 to deal in lumber and clay products. The incorporators are James Cannon, Geo. W. Cannon and Wm. F. Cannon.

The Southern Asphalt and Construction Company, of Stringtown, Okla., has been incorporated with a capital stock of \$25,000. The incorporators are John D. Masters, Sherman, Tex.; George D. Moulton, Stringtown, and T. W. Crowder, El Reno, Tex.

The Broadway Lumber Company, of Cleveland, Ohio, has been incorporated with a capital stock of \$20,000 to deal in lumber and general building materials. The incorporators are Jay A. Tousley, L. J. Randall, D. T. Jackson, D. F. Hatch and S. E. Homer.

Master builders of the Tri-cities, Moline, Rock Island and Davenport, Iowa, elected the following officers: President, K. I. Willis, Moline; first vice-president, Edward Kunkel, Davenport; second vice-president, J. J. Lurch, Rock Island; third vice-president, C. E. Heaps, Moline; secretary, Max Heinemann, Rock Island; treasurer, W. H. Borgmann, Davenport.

NEW BUSINESS.

How It is Created By Some Cement Manufacturers in Co-operation With the Retailers in Small Country Towns.

The trend of all business nowadays in seeking widespread, liberal patronage as the basis of extensive and profitable sources of demand is toward the country—and that is where cement manufacturers and concrete workers should be educated to make the strongest possible play. Just as the slogan of aid for the tired, despondent city dweller is "Back to the farm," so the slogan of modern business, in building up custom, increasing demand and producing manifold consumption, is "Back to the farmers."

The cement trade is coming to a realization of this fact just as surely as any other line of commerce or industry. The agriculturist is no longer merely a tiller of the soil, designed to supply the needs of cities, which, in turn, assume a "Holier than thou" attitude toward him. Farming is no longer numbered among the slavish, unremunerative occupations, but, on the contrary, is attaining through the adoption of scientific agricultural methods, something of the dignity of a profession. Being a professional man nowadays, the farmer is progressive, alert, receptive for new ideas and usually well supplied with money to constitute a prompt, well accredited customer with whom to deal.

The millions of farmers in the United States are now just so many millions of individual consumers of concrete and cement. The cement trade has been confronted with this fact, has taken a long breath of admiration not unmixed with surprise, and should now be bending every effort toward converting the prospective into the reality in business.

Cement manufacturers have fallen in line with the national business tenet that the farmer may no longer be considered simply as a consumer of gold bricks, fake stocks and bonds, homespun, canned eatables and such implements as he may need in tillage and harvest seasons. Everybody is catering to the rural contingent. There is a National Good Roads Association which is furthering an immense campaign which will result in fine highways and easy access to market for every farmer from the Canadian border down to the Gulf and from the Atlantic seaboard to the Pacific coast. The Department of Agriculture in Washington has expanded in importance and influence beyond the limits of the imagination of its founders. It has the war and foreign service diplomats beaten six ways for Sundays when it comes to a question of influence. And there are inland waterways improvement commissions, senatorial committees appointed to reclaim farm lands and provide irrigation, et cetera ad libitum—until it seems that the entire country is headed "back to the farm."

All big manufacturers, whether they make shoes or breakfast foods, or automobiles, or up-to-date building materials and furnishings, are making a strong appeal to the farmer. His patronage, once gained, is steadfast, profitable and forms one of the best advertisements that can be gained, the expression of a satisfied customer.

In line with other business men who exert national influence in their respective markets, cement manufacturers are following along the line of rural selling. In the cities immense building projects arise and disappear. Metropolitan building is subject to influences of the weather, local money market conditions and multifarious other factors, most of which incline in favor of the cement trade, to be sure, but a steady fire of demand and a continuous rate of consumption with farmers, when once established, may be expected to run on interminably.

Indisputable evidence of the strength of the cement trade's appeal to country customers may be found in the growth of rural cement dealers within the past few years. Every big mill owner now lists an array of up-state dealers in tens or even scores, with whom he does business consistently all the year 'round, because of the range of territory which is covered. The business of every manufacturer now should be to educate his rural representatives to greater activity in their respective fields and also to increase the demand centered upon these rural vantage points through arousing interest in the most approved structural material among its future patrons, the farmers.

Obviously, there are two ways to accomplish these purposes. One is the direct appeal through a personal form of approach. The other is general publicity for cement and concrete through mediums which will touch the prospective consumer constantly and in a vital spot. Both systems are appli-

cable to education of either the country dealer or his customer.

"I start the country retailer talking by touching upon a personal topic with him through a letter from myself or some member of the firm," said a prominent cement manufacturer whose reputation extends from coast to coast as a producer of rural business, when recently interviewed upon the subject of his specialty. "Then I furnish him with means of educating both himself and his friends in the community. Follow up that procedure with a little well-directed newspaper advertising in the country weeklies and semi-weeklies, or any publication which will get in touch with the farmer at home—and you have the system in a nutshell. It builds up a magnificent aggregate of patronage and an imposing total of consumption of material at the end of a year."

"Now to further outline the first step—I take my list of country distributors and dictate a form letter, which is sent to each one, signed by myself with a strong personal note throughout the brief, so that the dealer knows we are pulling together. 'My dear Mr. Blank,' I begin, 'you have performed excellent service as a distributor of our cement, and before we go any further I would like to extend congratulations upon the results accomplished during the past year in your section. However, after close study of the situation affecting your line and others similarly situated, I believe that there is a fine opportunity for you to do bigger business with more profit if you will talk cement to your neighbors and friends. Give them specific information as to what they can do with concrete, in the way of buildings and appurtenances best suited for the farm, and do not mind expenditure of time in outlining the advantages of the product in a direct, personal manner with prospective customers. We enclose under separate cover a pamphlet detailing concrete construction on the farm and will be delighted to furnish specifications, instructions, etc., for further procedure with anyone whom you may interest. Counting upon your ability to build up plenty of business for both yourself and us, I remain, very truly yours,' and so forth."

"Supplementary to this line in awakening the retailer himself I send him an interesting booklet," continued the manufacturer. "The volume is neatly gotten up, durable, and contains simple information, instructions concerning farm buildings, walks and drive-ways specifically and a multitude of photographic illustrations. First we give a simple definition of concrete, its methods of mixture, component parts, etc. Then we describe its qualities, neatness, durability, sanitation, reasonable cost and satisfactory service. Throw in some information relative to the ease with which concrete may be laid, the simple nature of tools and structural knowledge required—and I'll tell you that you will find the rural dealer and his customer alike an entirely different selling proposition from what you would imagine."

"The farmer is alert and ready to adopt the latest idea in improving his property, just as the manufacturer or merchant is willing to handle and install an improvement in his establishment. That's the reason why so many high-class implement manufacturers have so little trouble in disposing of vast quantities of high-grade farm tools every season."

"So we send the dealer 50 or 100 of these booklets to use in his educational work. We find that he studies them himself and distributes them broadcast. As the result, barns for horses and cattle, sanitary dairies and milk-houses, silos, feed troughs, walks and drive-ways, cisterns, dipping tanks and even sanitary hog-wallows are being made of concrete. We employed a scientific agriculturist at a comfortable figure to help us get up the book and we have every possible necessity and convenience on the modern farm that is adaptable to the illustration, specified and described as being made of concrete."

"To further the expansion of rural consumption we utilize a deal of space in country newspapers, farm journals and even almanacs. Our advertising is placed for us where it will do the most good by a reliable agency and the expenditure is amply justified in the returns. Our exploitation agency is instructed to change the ads from week to week and for copy we use largely the same matter that is in the pamphlet."

"One week the Kokomo Gazette contains one of our notices describing the value of concrete in silo erection. The Albany Herald, down the state, is running an ad boosting the concrete cistern or cesspool as an indispensable sanitary institution of the farm. Next week, perhaps, concrete water troughs and wind walls will be advertised to the farmer. The progress of the campaign is evident at every turn in our business and in my estimation an appeal, strong and direct, to rural patronage is one of the essential features of a successful cement manufacturer's career nowadays."

NEW JERSEY

Mason Material Dealers Hold Annual Meeting at New York at Which Matters of Vital Interest Are Discussed.

New York, N. Y., March 15.—The most successful annual convention ever held by the Mason Material Dealers of New Jersey was that at the Hotel Manhattan on Thursday afternoon and evening. A number of extremely interesting papers were read by men regarded as the leaders of their particular lines, and the discussions between individual members of the association on important topics of the day, particularly those affecting business within the state of New Jersey, were of real value, and created impressions that are bound to influence the trend of the materials business in that famous little state just across the river.

New Jersey during the past year has had a number of laws passed by the would-be radical element of the political machine controlling the state, and the most startling of these is the liability law that compels an employer to indemnify an injured employee whether he is injured by his own carelessness or otherwise. In some instances the employee must be paid a certain amount, not less than \$5 weekly for a period of several years. The insurance rates of policies of this nature have been as high as 3 per cent, and while some reduction has been made of late it is still a matter of heavy expense to the employer. This law and the mechanics' lien law as now drafted came in for a great deal of discussion during the meeting and the banquet.

The decision of the Supreme Court in the now famous mimeograph case to the effect that the holder of a patent has a monopoly of the manufacture of products turned out by his inventions and putting certain other far spreading restrictions upon the marketing of goods also came in for a great deal of discussion. It is feared by the materials men that the big companies will take advantage of this decision and create a monopoly in certain lines that will apparently be perfectly legal. While laws will probably be passed amending the present ones covering this subject, they cannot be made retrospective, and any arrangements made before their passage will be legal. It was stated at the meeting that one of the large companies controlling a certain line of material had taken advantage of the situation and that meetings had already been called and the matter discussed.

THE EXECUTIVE SESSION.

The executive session for retail dealers only was opened at about 1:15 p. m. The genial president, Walter C. Schultz, was in the chair, and Secretary James M. Reilly was at the recording desk. President Schultz made his usual gratifying report and complimented those present on the continued growth of the organization, which is one of the most progressive along similar lines. Six new members were elected in 1911, bringing the total to 126. Six new associate members were added to the rolls, making 63 in all.

Frank H. Genung, treasurer, read the financial statement of the year which showed a comfortable balance in the association treasury.

James M. Reilly, secretary, then read the report of the Board of Trustees. This follows:

ANNUAL REPORT OF BOARD OF TRUSTEES—1912.

By James M. Reilly, Secretary.

Gentlemen: In presenting to you at this time a report on behalf of the Board of Trustees treating of the affairs of the association, perhaps nothing that can be said is of more real importance than to recall the objects and purposes of the association.

SELL TO DEALERS ONLY AND TRADE PREFERENCE.

Fundamentally these consist of two principles: First, advocating in the trade the adoption by all parties concerned of a policy which stands for fair usage to the retail dealer, the selling of materials to consumers of all classes "through dealers only"; second, the absolute importance of retail dealers recognizing the right of the manufacturer and wholesaler to maintain an open market for the distribution of their products, and the general adoption in the trade of a policy of reciprocity in the matter of giving preference to wholesalers and manufacturers through whose help and co-operation conditions in the business have been and are being improved by an adherence to methods which this association has been advocating.

PROGRESS AND BENEFIT THROUGH CO-OPERATION.

It is undeniable that a material progress has been made and that benefits have grown out of the work which we have been engaged in; that the educational value has brought returns to every man engaged in handling and distributing mason materials in the state of New Jersey, and manufacturers supplying the same, the benefits being of a character that are admitted by

the manufacturer as well as the wholesaler and equally so by the retailer, to be to the advantage of all without imposing additional costs upon the consumer.

With such results to the credit of this association, it is not to be wondered at that we can state to the members present at this meeting that as much interest is being taken in the further success of our association work by the associate members representing the principal manufacturing and wholesale houses in the business, as by the active members of the body, certainly, a very gratifying situation of affairs, where harmony and good will appear to be the guiding purpose.

HARMONY AND GOOD WILL VS. TRADE JEALOUSY.

If we go back in our thoughts to conditions that existed eight years or more ago, which led to the formation of this body, we all know that sales were being made indiscriminately and without recognition as to the mutual rights or interests of dealers, and without special benefit to the manufacturer or the wholesaler, and we will also recall the feeling of personal bitterness which existed between many of the retail dealers in various sections of the state, a usual result where dealers were not acquainted, and where no community of interest existed, each antagonistic to the other.

Today we find harmony and good will where trade jealousies previously predominated, and we find also that reciprocal trade courtesies are now recognized, and that dealers stand ready and willing to help each other and to work in harmony where trade abuses and ruinous practices can be eliminated, also in the matter of exchanging reports on credits, and in many other ways we find that good will has taken the place of unprofitable trade rivalry.

STRENGTH AND INFLUENCE INCREASING.

The strength of this body is best indicated by the increase of influence represented in the list of associate members, and the knowledge that all of these individuals and concerns are engaged with us in upholding the objects of the association as well as in every work which



WALTER C. SCHULTZ, PRESIDENT NEW JERSEY RETAILERS.

will promote the development of our business interests or confer a benefit.

The continual addition of new members is an indication that the association is potent in its influence in the trade, and that its plan of work is satisfactory as well as successful.

It is very gratifying to include as a part of the year's record a statement regarding the membership, which shows that at the commencement of the year we had a total enrollment of active members numbering 123 and of associate members 67, to which we have added during the year the following:

NEW MEMBERS ENROLLED.

ACTIVE.

Otis Wright, Garwood.
Peter O'Connor, Bayonne.
I. H. Hoffman, California.
Adolph H. Koyen, Perth Amboy.
Daniel L. Miller, Lyons Farms.
The Reardon Co., Princeton.

ASSOCIATE.

W. G. Hartranft Cement Co., Philadelphia, Pa.
Samuel A. Wilson, Newburgh, N. Y.
Raritan Mercantile Co., Perth Amboy, N. J.
Lehigh Portland Cement Co., Perth Amboy, N. J.
Pennsylvania Column Co., Easton, Pa.
E. Meyer, Edison Portland Cement Co., New York.

This gives us a total of 129 active members and 73 associate members, to which number each of us should endeavor to add the names of many others during the present year.

ADJUSTMENT OF TRADE COMPLAINTS.

The most gratifying result of the year's work to be reported is the fact that every question of complaint submitted by members during the past twelve months to the Board of Trustees was made the subject of conferences with officials of the various companies con-

cerned with the final result that the various differences were adjusted to the mutual satisfaction of all parties concerned.

It is not considered advisable or necessary to include a record of these complaints, or to refer to the concerns against whom the same were entered, the members of your board agreeing that with the adjustment of any matter of dispute the slate should be cleared and the cause of controversy forgotten.

HOLLOW TILE AND SEWER PIPE.

To bring about a better understanding in reference to the sale and distribution of tile block and sewer pipe, a sub-committee held conferences with officials of several companies without success, owing to existing conditions in the trade presenting obstacles impossible to overcome at this time.

LIABILITY INSURANCE.

Attention was directed to the question of effecting an organization, under which plan of mutual liability insurance might be successfully organized, as a relief to the excessive rates charged by liability companies for accident insurance, and further thought will be given in this direction should the legislature enact amendments to present insurance laws at this session, which would permit of mutual companies being organized under reasonable conditions.

LIEN LAW LEGISLATION.

The veto by the governor of the Lien Law Bill enacted at the last session of our legislature was seriously deplored by your Board of Trustees, due, we are advised, to ex parte evidence given by those opposed to the measure, but we are pleased to say advantage has been taken this year to confer with the governor on the question, also to co-operate with the committee representing other interests in the preparation of new measures, which are still pending in the legislature.

DEALERS MUST APPEAL TO THEIR ASSEMBLYMEN.

It seems to your Board of Trustees to be all important for every dealer in the state to make a personal matter out of this question; if need be, to go to Trenton Monday night next, and insist upon your assemblyman and senators pledging their word to vote for the passage of these bills, and unless the most strenuous effort is put forth to overcome opposition which has developed, it will be futile to expect to have these bills enacted into law.

TO CO-OPERATE IN DEFENSE OF SUIT AGAINST LUMBERMEN.

In connection with the suit commenced by the Department of Justice against the retail lumber interests of the state for being in restraint of trade, under a construction based upon the Sherman Law, your board felt that some action should be taken in view of the fact that our association is operating practically on the same lines and with the same objects and purposes in view; and that any decision rendered in this case would directly affect the future of this organization. It was decided to indicate our interest in the question, and to manifest our sympathy in a practical way to the lumber dealers of the state, by authorizing an appropriation of \$500 as a contribution toward the payment of counsel fees which are exceptionally heavy in this case. A tender of this sum has been made to the lumber association, and we are advised that our action is appreciated and that our offer to contribute will be accepted if the costs of the suit be such as to make it a burden upon the lumber dealers of the state.

FINANCIAL CONDITION.

The financial condition of the association will be represented to you in the statement to be submitted by the treasurer, therefore we will omit reference in this report. However, we will take this opportunity of urging upon all members to be more prompt in the settlement of their dues, and those who have neglected to pay up for the past year are urgently urged to do so without further delay.

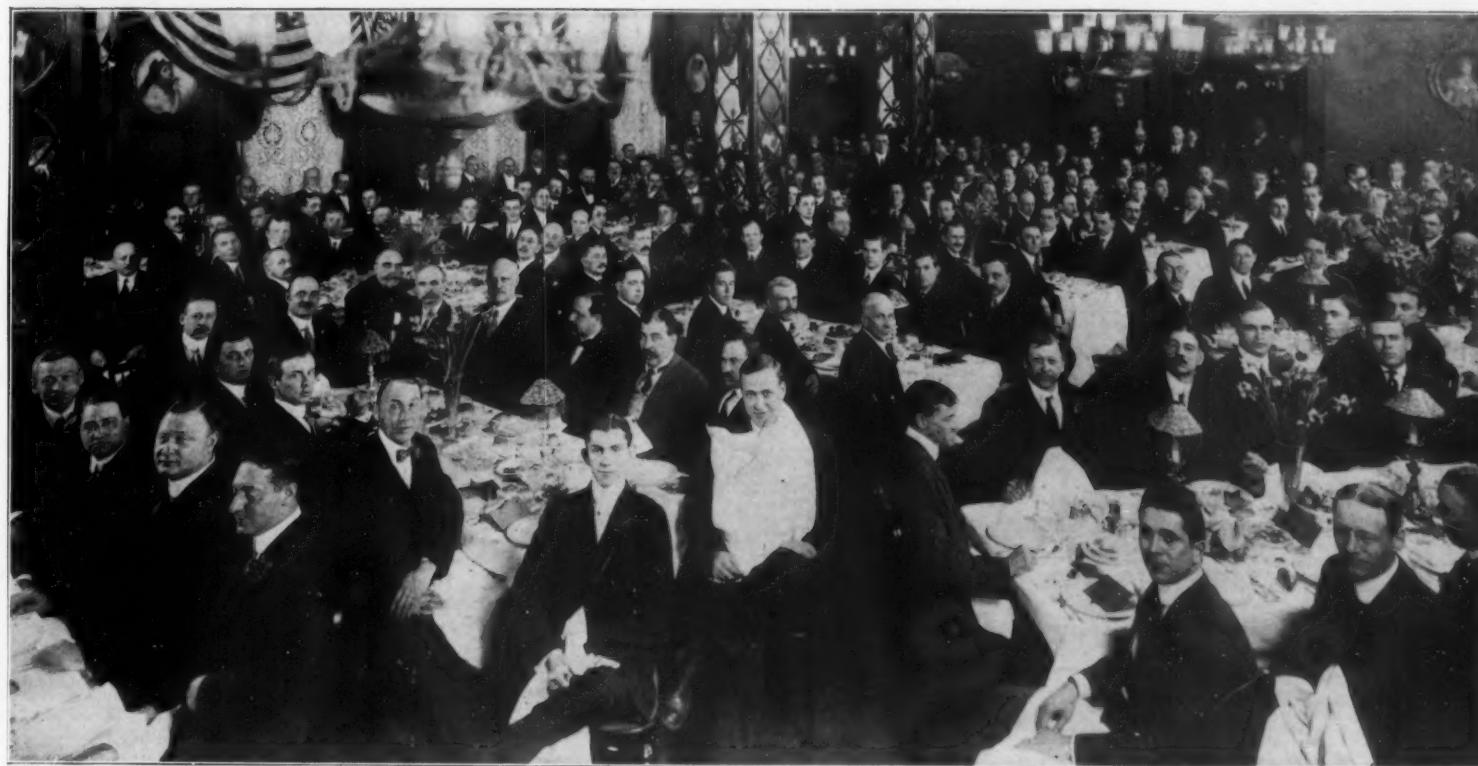
With reference to trade reciprocity, your board would direct attention to irregularities practiced by retail dealers which do not reflect credit to the individual or to the association, and which in our judgment dealers must avoid the possibility of allowing to recur.

DISCREDITABLE BUSINESS METHODS.

For instance: One of our associate members, prior to becoming a member, had on his books as a customer a cement block manufacturer, using a large quantity of material annually, who, when considering the question of becoming an associate member, to meet the conditions of membership and the wishes of dealers in the locality, decided to give up the trade of the block manufacturer, and after securing his trade for one of the local dealers, expecting, of course, that the dealer would continue to sell to him the brand of cement he had previously been using—the block manufacturer having always used their brand exclusively and paid his bills promptly—but instead of so doing the local dealer ordered one single car of cement, and then dropped the manufacturer who had given him the customer and had furnished such a substantial proof of sincerity, and has since been pocketing his profit. While this case occurred more than a year ago, the dealer continues to supply the block man with another brand of cement and the manufacturer who turned his customer over to him has sold no cement in that town ever since. Another case is one where a manufacturer turned a good customer over to the local dealer and had the aggravating experience of seeing another manufacturer step in and take the trade of what had formerly been one of his best customers, and the second manufacturer has continued to sell to the dealer ever since, who has been supplying the customer.

This, in the judgment of your Board of Trustees, is trade piracy practiced to the loss of respect of all engaged in the business, and it is for the membership of this body to denounce in every way possible a practice of this kind and to take measures to prevent it; otherwise, should such methods be continued, or allowed to continue, the value and good that has been accomplished by our organization will be undermined, and the influences and purposes of our organization be destroyed.

A distributor who sold brick when and where he could, frequently competing with those dealers who were foolish enough to carry his brick in stock, found that he needed a dealer to get rid of some of his brick. Having a similar grade to that made by an associate member (who protected his customers in the way they should be protected) he, the distributor, went to the dealer who had been handling the associate member's goods and by a cut in price induced him to put in his brick.



BANQUET MASON MATERIAL DEALERS ASSOCIATION OF NEW JERSEY AT HOTEL MANHATTAN, NEW YORK CITY.

This example is one that particular attention is directed to, for the reason that it is said the price counts above anything else with some dealers. Certainly if such an impression were to prevail, the manufacturer who protects our trade and makes it possible for us to market our goods at a reasonable profit, would have greater reason to object, as he or they are giving far greater value in the long run than any cut price inducement which could possibly be offered, and if we allowed a manufacturer who does not protect the dealer to unload his surplus stock on us, even if he were to give the material to us, we deserve to take the consequences.

BREACH OF CONTRACT AND RESPONSIBILITY.

In another case brought to our attention of a different nature but equally disreputable, a dealer contracted for a given quantity of cement at a price, to be used on various jobs which were specified. Later in the season a falling off in demand resulted in a reduction of prices, and the dealer, instead of living up to his obligations, disregarded his contract and supplied the jobs with other brands that he bought at a lower price.

The question asked of us by the manufacturer was: Would such a dealer, if prices had advanced, fail to insist upon his order being supplied in full?

What are such men thinking about who indulge in practices of this kind? They know that they are violating the rules of business, breaking the rules of common honesty, and helping to destroy the confidence this association is endeavoring to build up between all parties in the trade.

Your Board of Trustees considers such unbusiness-like methods injurious to the best interests of all dealers, and will henceforth invite complaint against all offenders, promising that where evidence is furnished to warrant action, an order to expel the offender will be made and his name given to the trade, this rule to apply to associate as well as active members, who may be adjudged offenders against honorable trade principles.

In submitting the foregoing your board would say that the cases cited are of an individual character, and that the few offenders do not represent the dealers in mason materials. On the contrary, we are compelled to assert that they are exceptions in the trade, and that the rank and file of dealers believe in following honest rules of trade in the conduct of their business, and it is to be hoped that the dealers that have indulged in such practices will correct their methods for their own benefit, and the benefit of all concerned.

Let us each strive during the coming year to uphold the policy of the association, to conciliate our interest in advancing a better understanding between dealers and manufacturers, and a larger co-operation by putting into practice the policy of reciprocity in the giving of preference when placing orders.

Submitted on behalf of the Board of Directors.

JAMES M. REILLY,
Secretary.

March 14, 1912.

The committee on nominations brought in its report, which follows. All were elected:

President—Walter C. Schultz, Hoboken.
Vice-presidents—Charles Agnew, Paterson; Uriah F. Washburn, Jersey City.

Advisory Board—Charles W. Ennis, Morristown.
Secretary—John M. Reilly, Newark.

Treasurer—Frank H. Genung, Newark.

Term expires 1912—Selah Schoonmaker, Somerville; Morton T. Brewster, Ridgefield Park; M. P. Stephens, Summit; E. L. R. Cadmus, Bloomfield; Joseph Brady, Bayonne; H. A. Todd, Plainfield.

Term expires 1913—J. C. Richardson, Trenton; M. F. Ellis, Bernardsville; W. C. Salmon, Boonton; J.

D. Loizeaux, Plainfield; Horace S. Osborne, Upper Montclair; A. G. Bolton, Perth Amboy.
Term expires 1914—F. W. Veghte, Roselle; George A. Smock, Asbury Park; Edwin Demarest, Tenafly; I. R. Rolfe, New Brunswick; Henry N. Sayre, Newark; Edwin Taylor, Elizabeth.

OPEN SESSION.

At 3:25 the association went into open session for both active and associate members.

President Schultz opened the session. He praised the work of Secretary Reilly and Board of Trustees, and also thanked the members of the association for their hearty co-operation. His speech follows:

ADDRESS BY PRESIDENT SCHULTZ.

Gentlemen: It has given me great pleasure to have been permitted to serve this body as president and to be re-elected to that office during the past five years, not only because of my earnest and personal interest in the work of the body, but especially on account of the pleasant and delightful companionship which I have enjoyed in meeting the dealers in mason materials from all sections of our state, and also the manufacturers and wholesalers and their representatives.

The uniform kindness and courtesies that have been extended and the real co-operation which has been accorded to every effort made to advance the progress of our work has been gratifying beyond measure, and I feel at a loss for words to express to you my appreciation and thanks for all that you have done and what it means to me.

The enviable reputation for "doing things" which the New Jersey Association of Mason Material Dealers has earned, is largely due to the valuable aid and advice which we have had at command from our efficient and experienced secretary and to the loyalty and support of a most excellent and unselfish, hard working Board of Trustees.

When you add to the work of a responsive Board of Trustees support such as has been given to the policy of the association by the dealers included in our membership, it goes to make up an influence which is felt in the trade and commands respect.

At this time I wish to review some of the changes that have taken place in the eight years since this association was formed, and give a few conclusions that I have drawn from association work. My views may not coincide with yours, but I hope that they will at least serve as a basis for a free and full discussion of the points that tend to make or mar the success of our association, which I believe is dear to many of us.

Eight years ago, with a few exceptions, the dealers of New Jersey were strangers to each other. Many of them did not want to know each other and had little interest in each others' affairs. In some cases competition was so intense that a feeling of hatred existed between neighboring dealers that resulted in the use of underhand methods and spite work that were neither credit to the individual nor to the trade. Poachers and scalpers were numerous and last but not least the dealer frequently found that he also had the manufacturer to compete with.

Such conditions fostered the ruinous features of bitter competition, added to credit risks, through the difficulty of getting accurate information from a competitor, established unreasonable delivery customs and encouraged the various encroachments that I have mentioned on the dealers' rights.

The manufacturer who wished to confine his sales to the dealer found rival manufacturers stepping in and snatching such orders as they could handle.

Naturally, under those circumstances, dealers were tempted to sell for less than they could afford to and

their financial standing was so weakened in some cases that the manufacturers did not consider them desirable customers.

This association was formed to bring about better conditions in the trade and to establish customs that would permit material to be handled in the most economical way—which is undoubtedly through the dealer, when his business is properly conducted.

Being brought closer together through association work and getting each others' experience broadened our view of the business in which we are engaged and changed our opinion of our neighbors to such a degree that a feeling of friendship has replaced that of enmity in many cases. We began to see that men in the same line of business had interests in common, to realize that there was an enormous waste of time, energy and money in our methods of doing business; and that this waste could be very much reduced through concerted action. Local meetings followed. Information was more freely exchanged and excellent results have come from such meetings where the dealers have taken advantage of their opportunities and are working in harmony.

Starting with a very small list of associate members, the number has steadily grown until we now have many of the strongest, most reliable and best manufacturers and distributors doing business in this part of the country.

Their methods of doing business, their goods and their prices, are usually right. They merit our trade and should be given a preference because they are working for our interests—and it is surprising to know what some of them are doing in that direction.

The policy of how the manufacturer and distributor shall market their goods is now in the dealers' hands, and if we give as much consideration to their interests as our associate members are giving to ours, the trade will, I am sure, follow in its proper channel.

Our associate members are entitled to every consideration. When a salesman of such a manufacturer or distributor presents his card, it is our duty to see him if possible. We may not be able to give him much time, or an order, but we can treat him with the courtesy that is due him.

A knowledge of his goods such as we may gain from him may be the means of landing orders for us later and of avoiding the painful necessity of having to pay a damage claim for supplying material for work that it was not made to do.

A word of encouragement and some consideration for a young salesman who is trying to do the right thing, will go a long way toward keeping things straight. He must make sales or lose his job, and if he is doing his part faithfully, we should do ours.

Of course no one dealer can handle all the brands of material on the market, but our associate list offers a wide choice and if we stick to it in making our selections a fair distribution will result.

Now, I want to say a word to the manufacturers who are either trying to set prices for the dealer or who are unwillingly doing so. That should be avoided whenever possible, as the dealer alone knows the conditions governing his sales, the expense incident to them and the credit risk involved, and for these reasons the price set for him is frequently an unprofitable one.

Some manufacturers have attempted to create dealers. By that I mean hardware dealers, painters, supply men, coal men, etc., have been induced to handle a particular kind of material without regularly engaging in the mason material business. This is a mistaken policy, because the men who are regularly engaged in some other line and put in some material as a side line do not figure on making their profit from this material, and for that reason are very apt to sell it for anything they can get—sometimes unloading it at cost—which induces the dealer to cut his prices too low.

Such practices may do a great injustice to the dealer who anticipates selling his goods at a reasonable profit which will enable him to pay his bills and continue in business, and if the manufacturer is hurt by the reaction that is sure to follow, he has only himself to blame.

In conclusion I would say that the past year has been a progressive one in the development of sound and economical methods of marketing masons' materials in New Jersey.

There have been some few occurrences which we regret, and for which both dealers and manufacturers have been to blame at different times; but nearly all of the cases that I have in mind might have been prevented by the practice of the Golden Rule, and this year I trust that an earnest effort will be made by all of us to "Do unto others as we would have others do unto us."

L. R. Hoff, of the H. W. Johns-Manville Co., then read a paper on Stucco, which will be printed in a later issue of this paper, lack of space preventing its being printed at this time.

The paper of W. S. Mallory was listened to with a great deal of interest as it presented statistics from a new and novel viewpoint.

"THE FUTURE."

By W. S. Mallory, President, Edison Portland Cement Company.

I want to bring to your attention this afternoon two or three thoughts as to the future, which I trust may prove as encouraging to you as they are to me. I have arrived at my conclusions from a study of certain statistics, and let me now reassure you that it is not my intention to give you a lot of comparisons in figures, as I know of nothing more uninteresting than a mass of figures given in a talk.

Some one has said, "there are lies, damn lies, and statistics," but in spite of this statement I am going to draw my conclusions from statistics, as, in my judgment, one of the best methods for business men to form their judgment as to the future of business in general, or of any special line of industry, is a study of the past through statistics. It has been my experience and observation that a study of them in general gives a broader point of view of our own particular industry, as it seems to be human nature for many of the men in each particular line of business to honestly feel that they have more than their share of the agitation and unrest due to competition, politics, tariff, trusts, and other similar disturbing elements, while a broader view of business in general would show that their particular line of industry is no worse, and perhaps better, than some other lines. If I may put my point in another way, I would say that business men who study only their own line of business and base their hopes and worries on it, are likely to get more of the worry than of the hope by watching only what is going on in their own back yard, whereas if they would climb the fence once in a while and see what is going on in the yards of the fellows in other lines of business, in many cases they would be better satisfied as to the conditions in their own yard, and it is my experience that a proper study of general statistics not only helps us to climb the fence, but to better understand what we see in the other yards, and with this better understanding we are in a much better condition to judge the future of our own industry, be it favorable or otherwise.

Many of us unfortunately are much inclined to take a rather pessimistic view of the future at all times, and I am afraid that some of us are like the old woman who said, "I always feel bad when I feel good, because I know I shall feel worse afterwards," and I hope a little later on to point out where it will be to the advantage of even the pessimists to change their point of view and take a more optimistic position at times.

At present general business can hardly be called good, nor can we say it is very bad, as it seems to be about normal in volume, but less than normal in profits. Please note that I am referring now to business as a whole and not to any special line of industry, for I know that some lines, like cement, for instance, are much below normal, and a little later I will discuss them, but as a whole, the volume of business is nearly normal; but what interests you, as well as myself, is whether the volume will increase or decrease in the near future, as we all know that with a decrease the prospects of satisfactory profits are small, and it is my purpose to give you one thought in this connection which gives me great comfort and confidence as I consider the future.

Last September I spent some time in Canada, and while there I met a cotton manufacturer from Massachusetts, who, I am told, is one of the largest producers in the United States, and I had a most interesting and instructive two days' trip with him during which we discussed present and future conditions of business and statistics in general, and he asked me whether I knew what percentage of the past fifty years had been prosperous. I told him I did not know, nor had I ever seen the problem worked out in that way, but on my return home I would look it up and advise him as to the results.

In considering the problem I decided to go back sixty years, to 1860, so as to cover the period of the war of the rebellion, and I took each period of ten years, starting from 1860, and without burdening you with the detail of the figures, I found that for the period from 1860 to 1910, that fifty-two per cent of the years were prosperous; that is, years when the profits of general business were above normal, or practically one-half of the time. This seems to confirm the statements that action and reaction are equal, or that the pendulum swings as far in one direction as it does in the other. So much for the theory, but what of the practical application as to the future?

I can imagine some of you may be thinking, while it is probably true that one-half of the last sixty years have been prosperous, that the rule will not apply now, nor in the future, as times have changed, and we now have complications which affect general business, such as tariff agitation, trust legislation, labor strikes, etc., and I would remind you that in the past sixty years we have had civil war, foreign war, high tariff, low tariff, free trade agitation, resumption of specie payments, free-silver agitation, currency legislation, Interstate commerce legislation, anti-trust legislation and prosecutions, labor strikes, etc., and in spite of all these disturbing factors, over one-half of the period has been prosperous, and I cannot see any reason why the rule should not hold good in the future.

Now, what application of the rule can we make so to give us all the maximum results from it, both in periods of depression and prosperity, and as I probably can make my point a little clearer by referring to a special line of industry, I will apply it to the manufacturing and marketing of Portland cement.

You are all aware that cement is now being marketed

at the lowest price in the history of the industry, and as a manufacturer of cement, if I considered the future from the standpoint of the next eight months, I certainly would be very blue over the prospect, but when I apply the rule as outlined, my point of view is very different, for I reason that for the period of ten years from 1910 to 1919 inclusive, that two years have gone when the profits of business have been below normal, and that of the remaining eight years at least five of them will be prosperous, and that my particular problem is to so direct the policy of our company that we will be in good shape both in the manufacturing and marketing of our product to take full advantage of the prosperous years when they come, as they surely will, and this point of view helps me greatly to meet present conditions, and gives me much comfort as to the future, and I am sure that if you will carefully consider this proposition, that you all will benefit by it, and it will cut out a great deal of the unnecessary worry which many of you are doing about conditions which are sure to correct themselves.

It is equally important to consider the rule in prosperous periods, as while all of us will then push our business to the limit, so to make the maximum profit, we will have constantly in mind that the prosperous years are also limited, and we must so conduct our business that we will be well prepared to meet the poorer years when they come, as they surely will.

Undoubtedly some of you would now like to ask me when the change from present conditions to those of a more prosperous period will take place, and I wish that I could give you a definite date, but unfortunately I can not. All I can do is to give you my own judgment, which is that there will be very little change from present conditions during 1912 (I am now speaking of the cement business), but an increase in demand, with, I hope, a material increase in price, will come in the early part of 1913. One of my reasons for making this statement is that I have observed that changes in the demand for cement, either increasing or decreasing, follow changes in the demand for structural steel from nine to twelve months later. That is to say, that when the demand for structural steel is active and increasing, it is from nine to twelve months before the cement manufacturers feel the increased demand in their shipments, and the same rule works when the demand for structural steel falls off.

Now just a word about the cement business: If I were to ask you what you thought of the present selling policy of the cement manufacturers, I am quite sure that some of you would tell me some things which would not be very complimentary, and I will have to admit that you probably would be right in your criticisms; still, from observation and my knowledge of other lines of industry, I fully believe that the cement business is now no worse off than many other lines, and I believe it will respond quickly to better conditions of general business. I hear some people say that with a consumption of over 77,000,000 barrels in 1911 the demand has about reached its maximum point, and therefore the business has little future. I am sure that they are wrong, as I fully expect by 1915 to see the consumption pass the 100,000,000 barrel mark. When we stop to consider that in 1910, of the total buildings erected in 157 of the largest cities of the United States, only about four and one-half per cent were of concrete, it shows what a tremendous field we have in this one direction, as there are ninety-five and one-half per cent of the total buildings built of other materials. From my point of view as a cement manufacturer, at least one-half of them ought to be built of concrete.

I want to give you one fact which may help confirm the mental criticism which some of you made a few months ago when I referred to the present foolish price competition between the Portland cement manufacturers, and that relates to the turn-over of capital invested in the cement business as compared with other lines of industry. All these figures relate to plants in the state of Pennsylvania. For example, we will take the capital invested in plants and working capital of the tin plate industry, which is about \$10,000,000, and compare it with the annual market value of the production, which is about \$28,000,000—so we find that the capital is turned over once in every four and one-half months. On the same basis, capital of woolen goods is turned over every six and one-half months, furniture nine and one-half months, iron and steel eleven months, leather eleven and one-half months, locomotives and stationary engines nineteen months, electrical goods twenty and one-half months, and Portland cement has the proud distinction, of twenty different kinds of manufacturing, of taking the longest time of any by turning its capital over every thirty-four months. When you are trying to convince some cement salesman that his price is too high, just remember that fact. Also remember this one: It is my opinion that if to the manufacturing and marketing cost we should add a fair amount for depreciation and legal rate of interest on capital invested, as all manufacturers should, that every barrel of Lehigh Valley cement sold at present prices represents a loss. Many manufacturers do not figure depreciation and interest in their costs, but both are there, as many will find out sooner or later, so I ask you to deal gently with the cement salesmen who call on you, and not tell them your real opinion of the very unbusinesslike way their employers are today conducting the cement business.

I am not going to talk politics to you, but I want to give you just one thought in connection with the present tariff agitation. We all know that any prospective change in the tariff always affects the lines of business in which the tariff changes may be made, and for a very good reason, that manufacturers and their customers not knowing what the change may be, are compelled during the period of agitation to adopt a hand-to-mouth policy in manufacturing and buying, and the uncertainty of what may happen is very disturbing to business conditions, but just as soon as the tariff is settled both the manufacturer and his customers get busy and adjust themselves as quickly as possible to the new condition. It seems to me that much of this trouble could be avoided if the time element was made a part of every tariff change, whether it is a decrease or an increase in the tax. For instance, assume there is to be a reduction of twenty per cent in duty on some article of merchandise, if the tariff bill specified that this reduction was to take place over a period of four years, or a change of five per cent a year, business in that line could easily adjust itself to the annual change without any hardship to any one, and any future changes, either of increase or decrease, would not cause uneasiness in business life.

President Schultz then invited open discussions, and Horace S. Osborne, president of the Osborne & Marsellis Co., Upper Montclair, proposed that a credit office be established where members of the

association could obtain information regarding the credit of different concerns with whom they might have occasion to deal. He stated that such a bureau could be easily supported by each member subscribing a small fee.

Other interesting topics were discussed by members of the trade and the amendments to the lien law now before the committee of the New Jersey legislature came in again for considerable discussion. Members are much opposed to the measure as it is now written. The amendments as proposed are more favorable. The assembly will probably pass the amendments, but it is feared that Governor Wilson will exercise his veto power, unless the dealers get busy and bring as much pressure as possible to bear.

THE ANNUAL BANQUET.

The banquet was attended by the largest number of members and guests in the history of the association. So many were there that a number of tables had to be set in the ante-rooms, and these unfortunate missed a number of mighty good speeches and a part of the musical entertainment. An excellent dinner was served in the usual style of the Manhattan.

The committee on arrangements was composed of the following: Charles Agnew, chairman; Uriah F. Washburn, Morton T. Brewster, Charles W. Ennis, Frank H. Genung, Walter C. Schultz, president; James M. Reilly, secretary.

Bert Swett and Harry A. Brocas, of the Lehigh Portland Cement forces, and Horace S. Osborne, of the Osborne & Marsellis Co., received the eternal thanks of those in their immediate vicinity for their courtesy.

The toasts were unusually interesting, and the diners paid the closest attention to the speakers notwithstanding the fact that they were just through a mighty fine dinner, were exiles from Jersey and were on Forty-second Street, Manhattan, with its well known temptations.

Hon. Frederick W. Donnelly, mayor of Trenton, won the interest of the diners immediately by his kindly face and distinguished method of delivery. He spoke on the "Commission Government," and from the applause his remarks brought forth, one would suppose that every one present was an ardent supporter of the recall, referendum and other extreme radical measures. Mayor Donnelly, however, apparently touched home in referring to municipal rotteness. Trenton is now experiencing a clean government under the commission form, and material dealers there receive square deals. His Honor urged every one present to partake in public affairs and make conditions such that all municipal goods are sold on a strictly business basis so that "you will not have to get business in the manner you get it today."

S. A. Thompson, of the National River and Harbor Congress, discussed the opening up of the state rivers and canals, and the great saving that would result thereby. It was apparent from the applause he received that the railroads were lacking friends at the banquet. Mr. Thompson read statistics into his report which lacked the usual dryness, and he showed in numerous instances that the land transportation companies are really killing the goose that laid the golden egg by stifling canal development. He showed that the opening up of a canal has always developed rail traffic. Bringing matters down to a concrete basis, he showed how far a man could ship a certain amount of goods for \$1.00. By horse and wagon the cost per ton per mile was about 23¢, so that the dollar would move the freight only slightly more than four miles. The distance gradually widened until by one canal system the ton could be transported actually 3,000 miles.

Judge Robert Carey, of Jersey City, after sentencing fourteen criminals to jail during the day, then sentenced the audience to listen to him for some few minutes. He followed up the remarks of Mayor Donnelly and urged every one to take up the cudgels of public life. He asked the members if they were satisfied with the mechanics' lien law, and they all shouted "No." Then he replied coolly that they alone were responsible for the law, that they had shirked their duty, and by the time he stopped talking it was apparent that every one had made a mental resolve, at least, to immediately enter the political arena.

Rev. Howard J. Chidley, of East Orange, then addressed the "congregation." His wit won the crowd instantly, and he told what was said to be a new Abraham Lincoln story. As these have cash value now, they are worth repeating. Abraham, arguing a case in Missouri, was opposed by a fat attorney, who, while wildly gesticulating, ripped his trousers. A wag in court started a subscription for a new pair, and passed a note to Lincoln, asking him to subscribe. The Emancipator took out a bill

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and wrote: "I hereby subscribe a dollar to cover the end in view."

After which the "congregation" voted the pastor a good fellow.

Among Those Present.

William B. Du Bois, president New York Builders' Exchange.
Ralph Dinsmore, secretary National Builders' Supply Association.
W. S. Mallory, president Edison Portland Cement Co.
L. R. Hoff, H. W. Johns-Manville Co.
Horace S. Osborne, Osborne & Marsellis Co.
W. A. Dunlap, Osborne & Marsellis Co.
Bert Swett, Lehigh Portland Cement Co.
Harry A. Brocas, Lehigh Portland Cement Co.
William C. Morton, Consolidated Rosedale Cement Co.
Foster F. Comstock, Comstock Lime & Cement Co.
U. F. Washburn, Washburn Bros.
Raymond Mason, Edison Portland Cement Co.
C. W. Ennis, Ennis & Co.
Otho Wright, Garwood, N. J.
Peter O'Connor, Bayonne, N. J.
J. H. Hoffman, Califon, N. J.
Adolph H. Koyen, Perth Amboy, N. J.
Daniel H. Miller, Lyons Farms, N. J.
Reardon Co., Princeton, N. J.
Buchanan & Snock, Asbury Park, N. J.
Hopping, McHenry & Frost, Atlantic Highlands, N. J.
James Brayde Sons, Bayonne.
Ogden & Cadmus, Bloomfield.
Edward Riggs, Jr., Burlington.
Cook & Haigh, Caldwell.
John J. Demarest, Closter.
Dunnellen Lumber & Stone, Dunnellen.
T. F. & H. C. Sayre, Elizabeth.
J. and S. S. Thompson, Elizabeth.
Neurichter & Hoore, Elizabeth.
George H. Payson, Englewood.
James T. Pierson & Co., East Orange.
August Theil, Guttenberg.
Chas. S. Schultz & Son, Hoboken.
Trost & Hinternhoff, Hoboken.
J. P. Hall, Inc., Jersey City.
George G. Salmon, Maplewood.
William O. Persons, Montclair.
Cook & Genung, Newark.
James M. Reilly, Newark.
Edwin Demarest, Tenafly.
W. G. Hartranft Cement Co., Philadelphia, Pa.
Samuel A. Wilson, Newburgh, N. Y.
Haritan Mercantile Co., Perth Amboy, N. J.
Lehigh Portland Cement Co., Perth Amboy, N. J.
Pennsylvania Column Co., Easton, Pa.
E. Meyer, Edison Portland Cement Co., New York, N. Y.
Farnham Cheshire Co., New York, N. Y.
Rockland Rockport Lime Co., New York, N. Y.
Homan & Puddington, New York, N. Y.
The Kelley Island Lime & Transport Co., New York, N. Y.
J. B. King & Co., New York, N. Y.
Frank E. Morse Co., New York, N. Y.
U. S. Gypsum Co., New York, N. Y.
H. W. Johns-Manville Co., New York, N. Y.

TRADE PRESS.

A. A. Barkey, ROCK PRODUCTS, 50 Pine street, New York.
W. J. Dwyer, ROCK PRODUCTS, 50 Pine street, New York.

Cannon Brothers, James, George and William Cannon, have purchased the building material business of John Wheeler, for fifteen years a retailer at Geneva, Ill. Mr. Wheeler will retain offices in Geneva for his general construction and contracting work.

The Fred A. Smith Lumber Company recently banqueted the managers of its Central Illinois yards at the Paxton Hotel in Paxton, Ill. Those present were: Fred A. Smith and Robert L. Jones, Rockford, Ill.; H. J. Kahnley, Cissna Park; C. W. Kahnley, Ludlow; H. J. Kahnley, Jr.; Buckley; L. J. Ireland, Rossville; H. C. Campbell, Tuscola; H. C. Harmening, Pesotum; W. H. Bayne, Joseph Coulter and Oscar Swanson, Paxton.

NEW ENGLAND BUILDERS' SUPPLY ASSOCIATION.

On February 16, at the New American House, Boston, Mass., the members of the New England Builders' Supply Association gathered for their first annual meeting. The meeting was in every sense of the word a success, and every member that was present took pains to tell everyone else present how glad he was to be a member of the association.

Approximately fifty members were present when President Charles M. Kelly called the meeting to order at one o'clock in the parlors of the hotel. Then followed the roll call, report of the treasurer, secretary and reports of the various committees which had been appointed to investigate matters pertaining to association work during the year. All the reports were read and received the endorsement of the members present.

The president then appointed the following nominating committee to nominate the officers for the coming year: Messrs. Kiersted, of Hartford, Conn.; Palmer, of Boston, Mass., and Shaw of Pawtucket, R. I. After a brief conference the following nominations were made, and these gentlemen were unanimously elected as officers of the association to act for the ensuing year:

President—Charles M. Kelly, Providence, R. I.
Secretary—R. H. Whitney, Worcester, Mass.
Treasurer—R. C. Cleveland, Worcester, Mass.

Vice Presidents—Maine, S. W. Hersey, Portland, Me.; New Hampshire, J. W. Woodworth, Concord, N. H.; Vermont, F. E. Kimball, Burlington, Vt.; Massachusetts, Frank Howard, Pittsfield, Mass.; Rhode Island, E. D. Allen, Providence, R. I.; Connecticut, F. H. Johnston, New Britain, Conn.

Through the courtesy of Mr. J. C. Adams, of the D. J. Kennedy Company, Pittsburgh, Pa., the secretary read to the members present Mr. Adams' speech delivered before the National Builders' Supply Association in New York, entitled "Profit and Loss of the National Association." This speech was heartily applauded and a motion was made and unanimously carried that Mr. Adams be tendered a vote of thanks for his paper.

Then followed the general discussion, which was of interest to material dealers at large and a great deal of good was obtained from the talks. The business of the day being over, the meeting was adjourned at five o'clock and the members were given an hour in which to become better acquainted.

At six o'clock the members and manufacturers' representatives were escorted to the gold room, where there was prepared a sumptuous repast. The members at large were entirely surprised and delighted with what proved to be one of the principal features of the banquet, namely, the grand opera selections rendered by a select group of sweet songsters led by our good friends Frank H. Johnston, of New Britain, Conn., and George Parry, of Boston, Mass.

The banquet being over and last echoes from the artist having died away, the next advance was to the Colonial Theater, where the secretary had procured "way down front" a block of seventy seats, and needless to say the gentlemen present did full justice to "The Pink Lady," who was the hostess of the evening.

The meeting was in every way a success and the consensus of opinion was that the New England Builders' Supply Association was too good a thing to be neglected, and each man promised solemnly to go back home and talk another man into joining.

Notes of the Meeting.

"Bill" Simpson of Waldo Bros. was unanimously elected the official bouncer.

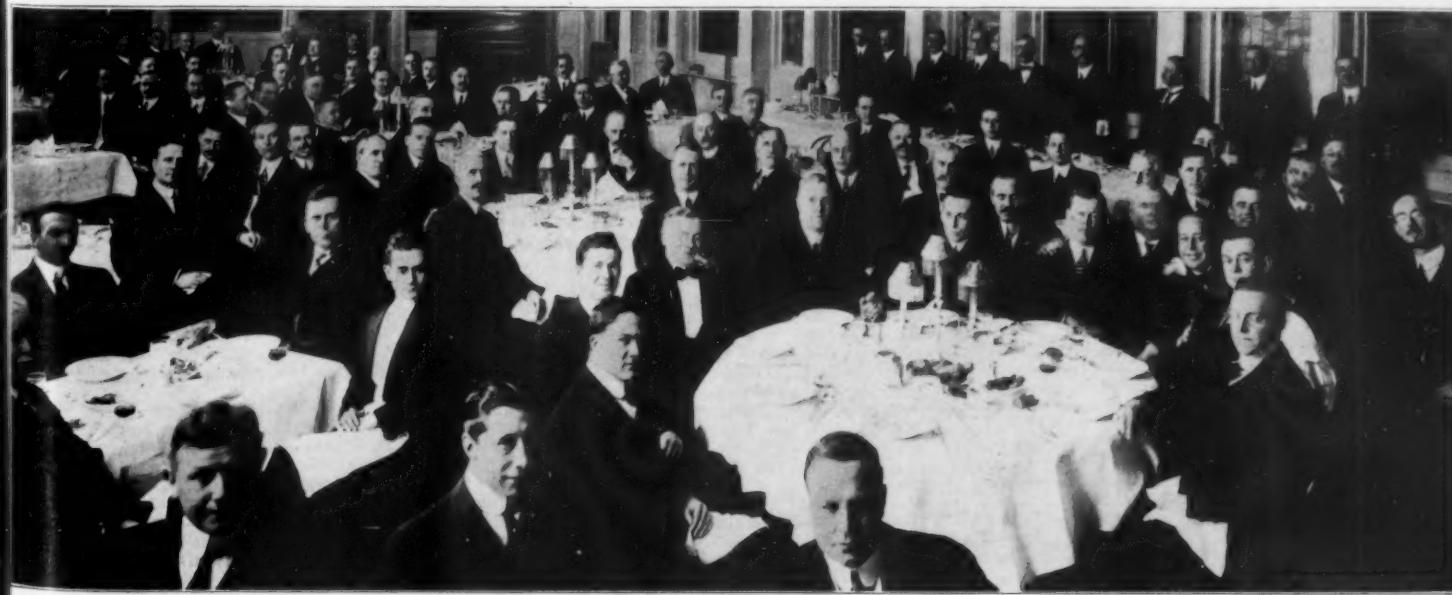
Frank Johnston and George Parry are certainly giving Caruso and Oscar Hammerstein a close run for first place.

Rumor has it that Charlie Kelly has applied for the position as leading man with "The Pink Lady." "Link" Powers of F. E. Powers Company, Worcester, Mass., was indeed a busy man reading his correspondence; a happy future is predicted for "Link."

W. H. Sprague of Waldo Bros. has been very successful in landing the Maine boys as members, and he had a representative bunch down from the "Pine Tree" state; they are all good fellows, too.

List of Members.

Andrews & Horigan, Biddeford, Me.; Anthony Atwood, Plymouth, Mass.; Henry R. Barber, Wickford, R. I.; H. W. Bishop Co., Boothbay Harbor, Me.; Borden & Remington Co., Fall River, Mass.; Carl Bros., Waterboro, Me.; Carl & Co., Portsmouth, N. H.; Charles S. Chase Co., Portland, Me.; City Coal & Wood Co., New Britain, Conn.; City Lumber Co., Woonsocket, R. I.; J. T. Cottrell Co., Pawtucket, R. I.; M. & T. Arthur Denault, New Bedford, Mass.; George H. DeWitt & Son, North Easton, Mass.; Dickerman Co., Concord, N. H.; R. B. Dunning & Co., Bangor, Me.; Thomas H. Early & Co., Providence, R. I.; Eastern Clay Goods Co., Boston, Mass.; Fitchburg Hardware Co., Fitchburg, Mass.; Fiske & Co., Boston, Mass.; C. S. Flood & Co., Waterville, Me.; I. Freedman & Co., East Cambridge, Mass.; George L. Gage Co., Lawrence, Mass.; W. K. Gilmore & Sons, Inc., Wrentham, Mass.; J. C. Goff Co., Providence, R. I.; John E. Gray, Corinna, Me.; A. & H. G. Hammatt, Newport, R. I.; The Hartford Cement Co., Hartford, Conn.; A. R. Hopkins Co., Bangor, Me.; H. R. Horton Co., Providence, R. I.; Horace W. Hosie, Franklin, Mass.; Frank Howard Co., Pittsfield, Mass.; Jones & Co., Winthrop, Me.; The Jordan Co., New Haven, Conn.; Judkins & Gilman, Newport, Me.; T. G. Laney Co., Pittsfield, Me.; David W. Lewis Co., Boston, Mass.; Manchester & Hudson Co., Providence, R. I.; Manchester Supply Co., Manchester, N. H.; Marc & Co., Waltham, Mass.; B. F. March Co., Worcester, Mass.; John S. Martin & Co., Marblehead, Mass.; McDuff Coal & Lumber Co., Pawtucket, R. I.; Bernard McTierman, Providence, R. I.; Newell Coal & Lumber Co., Pawtucket, R. I.; Wm. C. Norcross Co., Boston, Mass.; J. B. O'Connell Co., Dorchester, Mass.; Olney & Payne Bros., Inc., Pawtucket, R. I.; M. O'Mahoney Est., Lawrence, Mass.; Paisley & Willis, New Bedford, Mass.; Willard M. Petty, Fall River, Mass.; Portland Stone Ware Co., Boston, Mass.; F. E. Powers Co., Worcester, Mass.; Prentiss Brooks Co., Holyoke, Mass.; Proctor & Bowles, Waterville, Me.; Purinton Bros. Co., Augusta, Me.; Read-Nichols Co., Bath, Me.; Timothy Shea, Springfield, Mass.; Silliman & Godfrey Co., Bridgeport, Conn.; Smith-Green



BANQUET OF NEW ENGLAND RETAILERS AT BOSTON.

ROCK PRODUCTS

MARCH 22, 1912

Co., Worcester, Mass.; Spaulding & Kimball Co., Burlington, Vt.; Springfield Contractors' Supply Co., Springfield, Mass.; Stamford Mason's Supply Co., Stamford, Conn.; Starrett-Fields Co., Boston, Mass.; Strong Hardware Co., Burlington, Vt.; Geo. E. Sykes Co., Hartford, Conn.; Taunton Lumber Co., Brockton, Mass.; Taunton Teaming Co., Taunton, Mass.; Waldo Bros., Boston, Mass.; Wardwell Lumber Co., Bristol, R. I.; Watertown Lumber Co., Watertown, Mass.; Wheeler & Howes, Bridgeport, Conn.; S. E. White, Winchendon, Mass.; E. A. Wilson & Co., Lowell, Mass.; Windsor Cement Co., Boston, Mass.; Woodworth & Co., Concord, N. H.

NEW STATE ASSOCIATION.

The New York State Material Dealers' Association has been organized along the lines of the state associations in New Jersey, Ohio and Illinois, and officers have been elected. The idea originated at the New York Cement Show and took form later in a general call to all the retailers of the state to come into the organization. The new association starts with vim and energy characteristic of the men at the head of it, and an effort will be made to get every retailer of builders' supplies in the great state to come into the association. W. K. Squier of the Paragon Plaster Company was elected president, and this in itself assures the new organization of a prosperous and healthy future. The men who are to be credited with the plan for organizing it are: J. L. Hughes, of the American Hard Wall Plaster Co., Utica, N. Y.; John E. Maher, of the New York State Sewer Pipe Co., at Rochester, N. Y.; M. T. Bannigan of McQuade & Bannigan, Utica, N. Y., and W. K. Squier—who chanced to meet on the floor of Madison Square Garden during the show and talked the matter over. This baby member of the State Association family undoubtedly will be received with open arms by the other states. The time is coming when every one of the states of the union will have its association if for no other purpose than of getting together once a year and simply rubbing elbows and talking things over that are of mutual interest. Rock Products desires to extend its welcome to this new organization as a new force for good among building material retailers, and we feel certain that it will have a successful future. The officers of the new association are as follows:

W. K. Squier of the Paragon Plaster Company, president; Henry Schaefer, Jr., of Buffalo, first vice president; E. W. Ladd of Albany, second vice president; J. W. Ballard of Binghamton, third, and M. T. Bannigan of Utica, fourth vice president; J. Lynn Hughes of Utica, treasurer; John F. Maher of Rochester, secretary.

The association has twelve directors as follows: L. P. Butts, Oneonta; Frank P. Farrell, Oswego; H. A. Fisk, Elmira; J. A. Scobell, Cape Vincent; John G. Ferris, Johnstown; W. B. Newell, Little Falls; C. A. Sweet, Rochester; M. L. Pratt, Massena; J. F. Dinkel, Tarrytown; John McCarthy, Auburn; E. C. Schaffer, Schenectady, and George C. Broadbooks.

PERMANENT EXHIBIT.

A matter of interest to the trade is the establishment at Indianapolis of a permanent exhibition room for all kinds of building materials, appliances, equipments and furnishings. This is a new departure in methods for promoting the sale of building materials and the value of it ought to appeal to the retailer everywhere.

The one thing that the retailer of building materials lacks in his business, which almost every other merchant has, is the show window. The show window serves the purpose of creating a desire among those who see it displayed, and thus makes business. The building supply dealer has not had the advantage of this "Show Window." The establishment of such a central point, where building materials of various characters can be seen and studied by intending builders, by architects, by contractors and by the farmer, ought to give a healthy stimulus to trade. The ordinary man knows little about hard wall plaster, for instance; he knows little about hydrated lime; he knows little about many of the staples that the retailer of builders' supplies carries regularly in his stock.

How these things are used can be displayed in such a central exhibition room as that which has been established in Indianapolis. The enterprise has been extensively advertised and it is a feature that ought to appeal to retailers in every community who want to increase their business. The expense is borne pro rata, and being thus divided, it amounts to very little. The Exhibit Company takes charge of all the exhibits that have no attendant and courteous and competent floormen are always there to show and explain the exhibits. This is a step in advance, and it shows that the retailers in Indianapolis at least are alive to the idea of reaching out and getting more business.

ASSOCIATION

Formed By the Contractors and Retailers of Builders' Supplies in California.

San Francisco, Cal., March 16.—Over one hundred contractors and dealers in building materials, representing local associations and individual firms in all parts of the state, met at Sacramento, Cal., March 7, 8 and 9, to attend the first annual convention of contractors and dealers, with the object of forming a state association. At the first meeting, on the afternoon of the 7th, committees were appointed to frame the constitution, and their report was discussed the following day. As finally adopted on the afternoon of the 8th, the constitution admits to membership building material dealers and contractors in all the various lines of building work, but excludes the general contractors. The membership of the latter was advocated by the delegates from San Francisco and Alameda counties, but they were talked down by those of Sacramento and the interior towns. The constitution also declares the organization in favor of the union shop. The name finally adopted is, the Contractors' and Dealers' Association of California, the principal purpose being to maintain industrial peace by agreements with labor unions and to prevent subcontractors, dealers, laborers and owners from being defrauded on contracts. The officers elected for the year are: President, W. S. Simmons, of Sacramento; vice-president, J. E. Steere, of San Francisco; secretary, Frank Smith, of Sacramento, and treasurer, T. M. McShane, of Sacramento. The business session closed with a banquet, and on Saturday, the ninth, the visiting delegates were given a "joy-ride" through the Sacramento valley to Folsom.

NATIONAL BUILDING ASSOCIATION.

The main feature of the fifth annual convention of the National Association of Builders' Exchange, which was held in Washington, D. C. on February 27th and 28th, was the reorganization of that association.

At the meeting which was held in Philadelphia last year a committee was appointed to draw up new plans for reorganizing the association. The committee made a report, which was adopted with few changes. It was decided to call the new organization The National Building, Trade, and Employers' Association of the United States of America. The scope of the new organization was made very broad and arrangements were made for a committee consisting of the executive body and the board of control to work in the interests of the association between conventions.

The following officers were elected as the first officers of the new association: John Atkinson, of Philadelphia, Pa., president; John R. Galloway, of Washington, D. C., vice-president; I. H. Seates, of Baltimore, Md., secretary, and Alexander Pearson, of West Orange, N. J., treasurer. These members, together with the retiring president, F. N. Harris, Jr., of Philadelphia, are to make up the board of control of the association.

Most of the time during the meetings only executive sessions were held, but the only work done was the reorganization and a few resolutions were adopted which had to do with purely local conditions.

On the night of the 27th the delegates were entertained by the Builders' and Manufacturers' Association, of Washington, and had no sooner left the entertainment when a fire broke out, doing considerable damage to the building in which they were meeting. On the night of the 28th a banquet was held at the New Continental Hotel, which was the headquarters. John Trainor, of Baltimore, Md., was the toastmaster, and made a short introductory speech. He was followed by I. H. Seates, of Baltimore, and Walter D. Nolan, James A. Emery and John R. Galloway, all of Washington.

The convention was said to be one of the most successful ever held by the association. No definite time or place was made for the convention for next year, but it was the opinion of many that Washington should be made the permanent convention headquarters. New Jersey, Pennsylvania, Maryland, Virginia, North Carolina, Alabama, Iowa, Indiana, Ohio and the District of Columbia were among some of the states represented by the sixty delegates who attended the convention.

Dealing in building material is one of the chief objects of the Robinson Lumber & Grain Company, which has been incorporated in Iowa. The place of business will be at the newly organized town of Robinson on the C. A. & N. railway extension. The concern has a capital stock of \$20,000.

NEW YORK RETAILERS.

New York, N. Y., March 18.—The local building materials market during the past month has shown signs of awakening from its long winter's dullness. Dealers have received important inquiries from consuming sources, which would indicate that the trade is anxiously awaiting the advent of good weather to begin operations.

February building returns for New York city were decidedly favorable. The total value of February permits was \$9,280,088, compared with \$5,246,150 in the same month last year. This is an increase of about 80 per cent and indicates that spring building operations in the Metropolitan district will in all probability be much larger than they were last year, which was, when everything is considered, a fairly prosperous period. The East in general is picking up in the materials line and lumber is already in excellent demand, scarce and high.

E. B. Morse, of the Frank E. Morse Company, remarked that business was quiet during the past month, but it was generally expected to improve during the next month. Work has not been started as yet on account of the cold weather and the frost in the ground, which was found to extend to a depth of five or six feet. However, they look for a general awakening from the long winter by the first of April. The Frank E. Morse Company is located at 17 State Street, and is the agent for the Lawrence Portland Cement Company in northern New Jersey. It handles all of the Lawrence brands, which are Dragon, Paragon and Monarch. It also carries in stock the Higginson Manufacturing Company's white cement and wall plasters, line of the Berkshire Mills Company and also of the Washington Building Lime Company.

MEMPHIS RETAILERS.

Memphis, Tenn., March 20.—The persistent rains of the spring have done much to retard work here. The aspect is bright, though, at offices of contractors and architects, and many jobs are under plan. The cement market has been very much to pieces. Lime, sand and gravel hold up about as for some months past. Brick, terra cotta, sewer pipe and special roofings have had a good demand the last ninety days.

Last week the city commission awarded contracts as follows: Pipe, John A. Dennis Sons Co. and Fischer Lime and Cement Co.; cement, Crump Bros. & Cook; side walks, George W. Turner; Mississippi River gravel and sand, Union Sand and Material Co.; cement and gravel, E. R. Bryan and H. W. Brennan; coping and steps, F. D. Harvey; manholes and inlets, O. A. Keys; curbing and cross-walks, Davidson Granite Co.; general hauling, E. Holly; paving brick, Murphyboro Paving Brick Co.; working dirt streets, S. B. Walker; concrete combines, curbs and gutters, National Cement Co.

It is stated here that the Bank of Commerce and Trust Co. will late this year erect a fourteen-story addition to their present office building and on the site of the Luehmann Hotel, adjacent to the bank and which they own.

The Grace Construction and Supply Company, of Fort Wayne, Ind., has been incorporated with capital stock of \$50,000. The incorporators are John C. Depue, Charles H. Gumper and Martin J. Grace.

S. D. L. Jackson, of Youngstown, O., is the promoter of a paving brick company that will have a \$300,000 capital, and an output of 100,000 brick per day. The plant will be located near Hillsdale.

At McEwen, Tenn., four two-story concrete buildings will be erected as soon as the contracts can be let. George and Marshall Dotson and John Ridings will build the same.

A Little Rock dispatch says that the B'Nai Brith Order will shortly erect a hospital at Hot Springs, Ark., to be known as the Leo N. Levi hospital. The Order has about \$60,000 in the treasury.

The Blytheville Construction Co., of Blytheville, Ark., has been chartered with a capital stock of \$12,000 by W. W. Holipeter, L. Gee, W. M. Lutz and P. O. Echols.

The plant of the Eugene Concrete Works, Eugene, Ore., will soon be ready for operation. W. C. Hall is proprietor of the company, and is installing a Besser sewer pipe machine, Hobbs block machine, Sterling brick machine, and a tile (power) machine.

The company will build steam curing kilns at an early date, same to be constructed upon the most modern lines.

James C. Byrnes has sold his interest in the retail yard at Princeville, Ill., to J. B. Graham, and the firm of Byrnes & Graham will be dissolved.

Fireproof Products Company, Chicago, Ill., has been incorporated with a capital stock of \$200,000 to do contracting and construction work. Incorporators: Arthur L. Sailas, John Irrmann and I. M. Adams.

ROCK PRODUCTS

PITTSBURGH RETAILERS.

Pittsburgh, Pa., March 20.—Retailers and wholesalers in builders' supplies are waiting patiently for the sun to shine. No one, by any stretch of the imagination could call any weather we have had yet "spring time." Foundation work and all outside construction work is held up. When it starts there will be a rush of orders, for retail dealers are going to be very cautious about buying and not until they actually need it. The trade in Pittsburgh anticipates a busy year, basing their judgment on a large amount of municipal, railroad and trolley work already arranged for.

W. H. Williams & Co., which has been located on Fifth street for many years, will move April 1 to Penn avenue near First street.

The Dry Mortar Club holds very enthusiastic meetings every Monday noon at the Fort Pitt Hotel. Wesley Holmes is secretary.

The Pittsburgh Builders' Supply Association held its regular monthly meeting Tuesday evening, March 12, at the Fort Pitt Hotel. John Strauss of Knox, Strauss & Bragdon is president of the association and J. Q. Adams of the D. J. Kennedy Company is secretary.

Heppenstall & Marquis report that winter business has been very slow with the exception of the coal trade. Even in this it has been impossible to get shipments as rapidly as they should have come. The firm looks for a big city trade and also a good business with the traction companies this year.

Pittsburgh building operations in February showed a gain of \$350,000 over February, 1911, in spite of the extreme cold weather. There were 446 permits issued totalling \$1,081,104. This compares with \$1,457,535 in 1908.

William T. Liggett & Co. are doing some carload business in sewer pipe and report a very good inquiry. They also expect a big business in roofing this spring, as all prospects point that way. They report dealers in general to be buying very cautiously. This feeling prevails more in the Pittsburgh district than further out.

John Morrow, aged sixty-two, a well known contractor, died at his home at 23 Woodville avenue, West End, February 16. He had been engaged in the contracting business for more than thirty-five years.

The D. J. Kennedy Company reports some good jobs in already. Much work, they say, which ordinarily goes forward during the winter has been held up so that they look for a rush April 1. City work, especially, is bound to furnish a large amount of business this year, they think. Quotations are up on both sewer pipe and lath and there is a prospect that other supplies will also increase in price.

J. W. Windsor, secretary of the Houston Bros. Company, attended the recent meeting of the National Builders' Supply Association at New York and also the convention of the Ohio Builders' Supply Association at Dayton, Ohio. Mr. Windsor reports that his company has lately taken on the agency for the Ebeco nosing for concrete curbs. It is manufactured by the Edward E. Buhler Company of 103 Park avenue, New York. The Houston Bros. brick plant at Trafford City, Pa., is running full blast and has more orders for tapestry brick than it can take care of. The company's sewer pipe business is unusually heavy for this time of year and Mr. Windsor anticipated that prices will go still higher before long. He looks for a splendid year in most lines.

The Manufacturers' & Contractors' Club listened to a mighty interesting address by J. A. Weldon of Weldon & Kelly at a recent noonday luncheon in the Lewis Block. Mr. Weldon talked on the progress of the Building Code Committee in getting matters shaped up to the satisfaction and simplification of the building trade in the Pittsburgh district. Another recent speaker at the club was G. B. Hill of the Doubleday-Hill Electric Company, who spoke on "Concentration, the Control of the Mind." At the club's annual banquet February 15 the speakers included: Director Arthur A. Hamerschlag of the Carnegie Technical Schools, Councilman Robert Garland, President Fred R. Babcock of the Pittsburgh Chamber of Commerce and Hon. James L. Adams.

The Greater Pittsburgh Retail Lumber Dealers' Association held its annual banquet and election of officers tonight at the Hotel Henry. There was a large and enthusiastic attendance. A committee was appointed to boost the membership in Allegheny county the ensuing year. The retailers are just now especially interested in the standardizing of requisitions of architects for building lumber. The following officers were chosen tonight for this year: President, E. M. Diebold; vice-president, William Simen; secretary, A. C. Rightor; treasurer, Walter Ahlers.

L. M. Bayne, of Ottawa, was elected president and A. C. Bradish, of Ottawa, was chosen secretary at the annual meeting and banquet of the La Salle County Lumber Dealers' Association held February 23 at the Clifton hotel in Ottawa, Ill. I. D. Vincent acted as toastmaster. Among those on the program were E. F. Hunter, of Chillicothe, Frank Goodrich, of Wenona, George Wilson-Jones, of Chicago, secretary of the Illinois Lumbermen's Association; W. H. Miller, humorist; James F. Farrell, Rector Hitt and Douglas Malloch, associate editor of the American Lumbermen, of Chicago. An informal reception at the Ottawa Boat Club and a theater party were among the entertainment features.

SAN FRANCISCO RETAILERS.

San Francisco, March 15.—Business of a strictly retail nature has been extremely active, considering the time of year, owing to the fact that hardly any rain has fallen during the month of February anywhere in California. This has made it possible to carry on all kinds of outside work without interruption, and builders have taken full advantage of their opportunity. The same condition, however, is largely responsible for a marked quietness of business in a large way, and a feeling of great uncertainty regarding the future. Unless heavy rains fall this month there will be a tremendous shortage of crops throughout the state, and retail dealers, as well as the promoters of large construction projects, are not yet willing to make any provision for the future. It is believed that a good rainstorm would bring a heavy buying movement all over the state.

In the long run the dry year will probably improve the country market, as the farmers have had a bad scare and are planning irrigation work on a larger scale than ever before. The place of concrete in California irrigation is well established, and the country people are learning the economy of making their irrigation works permanent in the first place. Building in San Francisco, San Diego and Los Angeles is hardly as active as in January, though well ahead of February a year ago, while Oakland, Sacramento and Portland, Ore., show substantial gains.

At its annual meeting late in February the General Contractors' Association of San Francisco, with temporary offices at 402 Kearny street, elected the following directors: H. W. Beach, A. H. Bergstrom, John Miller, Chas. A. Day, Grant Fee, Edw. Ginley, C. W. Gompertz, C. J. Lindgren, P. J. Lynch, F. B. Masow and Chas. Wright. The new officers are: Chas. A. Day, president; C. W. Gompertz, vice president; C. J. Lindgren, treasurer, and W. B. Hague, secretary. Some time this year the association will occupy permanent quarters in the new Sharon estate building, which is to be fitted up especially for the accommodation of contractors' and material dealers' offices.

Frank Smith, secretary of the Sacramento Contractors' Association, is making great preparations for the state convention to be held there at the end of this week. He counts on the attendance of at least 100 delegates from various parts of the state.

The Bakersfield Builders' Exchange has been incorporated at Bakersfield, Cal., with a capital stock of \$10,000, by M. T. Kean, R. Pile, W. G. White, G. M. Wilkins, Chas. Daly, C. D. Brown, J. R. Rogers, O. C. Schatz and J. F. Endert. The Bakersfield Exchange is preparing to erect a building of its own.

The Henry Cowell Lime & Cement Company has taken the cement contract for the year's harbor work on the San Francisco water front, the minimum quantity being 75,000 barrels. The price was \$1.64 per barrel, 1 cent below the other bidders. The company reports a very satisfactory business in the local market for the last month.

The Reinforced Tile & Concrete Construction Company has been incorporated at San Diego, Cal., with a capital stock of \$200,000, by E. S. Galey, W. McDonald and J. H. Roger.

NASHVILLE RETAILERS.

Nashville, Tenn., March 20.—John B. Price, with T. L. Herbert & Sons, has returned from a trip through middle Tennessee and southern Kentucky. Business is good with the firm and indications are that trade will be active in building materials in a short time.

Permits for building in Nashville for February ran \$37,334 above the month of January. Also considerably above those of February a year ago.

The Chattanooga Paving & Construction Co. has purchased the plant of the Georgia Creosoting Co. at Ficklin, Ga., and will move it to Pensacola, Fla.

Johnson City, Tenn., is to have a new Opera House at the corner of Main and Market streets. Dr. J. A. Denton will erect the building, which will be 66x165 feet deep.

LOUISVILLE RETAILERS.

Louisville, Ky., March 18.—The building supply trade is just developing to normal proportions in Kentucky and the South. That there will be an unusual amount of it this year is assured, for the records of City Building Inspector Robert J. Tilford indicate a boom stage in the Gateway City at present, so far as constructionists are concerned. For the past three months the reports of Inspector Tilford have shown healthy increases even over those of corresponding periods last year. And if you should ask any builder in the Falls Cities, he would tell you that 1911 was the finest building year in the history of this part of the country.

An incident of regret to the entire building supply trade of Louisville was the death of Henry R. Snyder, president of the National Roofing & Supply Company, of this city, a short time ago. Mr. Snyder died as the result of a very short attack of acute pneumonia. He had been feeling ill for some time prior to the development of the disease, but was compelled to give up his duties only a day or two prior to the end.

Mr. Snyder was a native of Louisville, one of the best-known men in the Bluegrass concrete and building supply trades. He was the son of the late Samuel H. Snyder. After a thorough course in local schools he engaged in the concrete business during its comparative infancy in this section and became head of the National Roofing & Supply Company twenty years ago. At the time of his death he was forty-six years old. During his long experience in the local trade he built up a large clientele and was regarded as an authority in roofing and supplies.

Mr. Snyder was prominent in fraternal circles. He was a member of the Preston Lodge of Masons, the Red Men and the Belmont Club, attending St. John's Evangelical Church. He is survived by his widow, one son, Henry R. Snyder, Jr.; a daughter, Miss Evelyn Snyder; his mother, Mrs. Samuel Snyder, and a sister, Miss Mary Snyder.

"The weather has retarded business considerably this season but you might say that we are decidedly optimistic and feel no inclination to complain," said L. M. Rice, Jr., president of the Central Paint & Roofing Company.

L. M. Rice, Jr., president of the Central Paint & Roofing Company, recently returned from a short business trip through the East. Mr. Rice visited New York and found the Eastern supply trades to be in healthy shape, notwithstanding the prospects of a presidential election.

Business is pronounced to be uniformly good with Samuel F. Troxell & Company.

Samuel F. Troxell, president of Samuel F. Troxell & Company, recently returned from a short business trip through the East.

The Culley Cement Block Company is selling an unusually large amount of Kosmos Portland Cement this season. Sales in this especial retail department of the company have amounted to considerably more to date than the aggregate of last spring, according to the report of the company. The Culley Cement Block Company recently filed articles of amended incorporation, increasing its capitalization from \$15,000 to \$50,000. The move testifies eloquently to the confidence of the company in 1912.

The general offices of the Hanson Lumber Company have been moved to Boone, Iowa, from Panora, Iowa.

The Barnes Lumber Company, of Lampasas, Tex., has purchased the Boon building material business at Pearsall, Tex.

Jacob P. Sanders, 60 years old, for many years in the retail cement and lime business at Elkhart, Ind., died February 24 in that city. He was prominent in the business life of the city.

Frank Mall, 63 years old, a pioneer lumber dealer and building contractor of Aurora, Ill., died February 12 at his home in that city, the result of a fall on the icy sidewalk, in which his skull was fractured.

The Eureka Tile Company, of Manhattan, has been incorporated with a capital stock of \$25,000. The incorporators are J. Miller, of Newark, N. J.; H. A. Lanzner, I. Lippman, of New York City. To deal in tile, marble and building materials.

The heirs of L. M. Bostwick have sold their interest in the building material business at Centralia, Ill., to H. R. Hall, of Sandoval. Ralph Hunter, of Decatur, Ill., recently purchased a controlling interest in the Bostwick company, and the new firm will be known as the Hunter-Hall Lumber Company.

CEMENT

Association of American Portland Cement Manufacturers

Meets Semi-Annually.

OFFICERS

President	Edward M. Hagar...
Vice-President	W. S. Mallory...
Treasurer	John B. Lober...
Secretary	Percy H. Wilson...
	R. W. Kelley,
	T. H. Dumary,
	John B. Lober,
	Whitney Newton,
	W. H. Harding,
	Geo. E. Nicholson,
	A. H. Crane, Jr.,
	John R. Morron,
	Chas. H. Zehnder,
	Bethune Duffield,
	W. S. Mallory,
	Edward M. Hagar,
	R. W. Lesley,
	Frank E. Tyler,
	Conrad Miller.
Executive Committee	

ASSOCIATION TO MEET IN CHICAGO.

The Association of American Portland Cement Manufacturers will hold its next regular meeting at the La Salle Hotel, Chicago, April 8, 9, 10 and 11. Percy H. Wilson, secretary, says a large amount of business awaits the meeting and on that account it will be necessary to extend the meeting to four days. On the first and second days the committees will meet. The regular session and banquet will be held on the third day, and the fourth will be devoted to road work.

Judge McPherson, in the United States district court, Philadelphia, on February 21, appointed Sidney W. Keith, Robert W. Lesley and John Scott, Jr., receivers of the Reliance Cement Company, a subsidiary company of the American Cement Company, which owns all of the common stock of the defendant and 2,650 shares of the preferred stock. Receivers' bond was fixed at \$25,000. The Lesley & Trinkle Cement Company is the second of the subsidiary companies of the American Cement Company to be given over to the receivers on the application of the controlling company. It was placed on February 26 in charge of Sidney W. Keith, Robert W. Lesley and John Scott, Jr., who are also running the American company.

LOCK-OUT IN THE DANISH CEMENT INDUSTRY.

(From our own Correspondent.)

London, March 12th, 1912.

Protracted negotiations having led to no agreement between masters and men, the announced lock-out at the seven Danish cement factories came into force on March 4. The men, when the official conciliator was just about to lay his proposal for mediation before the parties concerned, introduced new points of conflict, which had not been mooted at the preceding meetings. The conciliator then had no other course left but to withdraw, referring the dispute to the parties concerned, with the result that the lock-out came into force.

STORAGE OF CEMENT.

Suggestions For Retailers, Contractors and Users.

Portland cement is easily affected by moisture. It is purposely made so; for, combined with water and other substances, it forms the best of all building materials—everlasting concrete. But moisture must be kept away from cement until it is needed for actual use. This means that cement must be stored in places which are dry and can be kept absolutely dry. Upon the proper storage of cement are dependent the reputation of the contractor or builder, the trade of the local dealer, and the satisfaction of the user.

Temporary Sheds for Contractors and Builders.

On account of the quantity which they keep on hand, dealers and contractors often build special houses for the storage of Portland cement. Almost any material will do for the construction provided it will shed water and remain weather-proof. Frequently, for temporary storage, contractors build sheds of "up and down" plank covered on the outside with one or more thicknesses of tarred paper. The floor must be above possible high water and open so that the wind can circulate under it. To make the house more completely damp-proof, the floor should be double or its equivalent. Often the same effect is obtained by a makeshift double floor of loose timbers and boards laid upon the regular floor. For such a temporary shed, there is nothing better than a well made one-way-slope tarred paper roof on sheathing laid with tight joints lengthwise or in clapboard crosswise fashion. Let the roof have a drip or over-hang of at least a foot on all sides. See that it is absolutely water-tight, that the rain cannot beat in under the eaves, and that the roof is fixed so firmly that a wind-storm will not raise it. It is advisable to put no windows in such a house and to have the door so securely hinged and fastened as to keep out intruders. Where use of cement in the work is dependent upon acceptance by test, provisions for piling should be made in accordance with instructions given below for dealers.

Storage Houses for Dealers.

The same general principles stated above apply to storage houses for dealers. Naturally the house is made more permanent in character. Consequently it should be supported by a concrete foundation extending into the ground below the frost line. Likewise, for a permanent building, there is no material so good as well-proportioned concrete. Place the concrete floor on sufficient coarse, compacted gravel or broken stone fill to bring the floor level a foot above the surrounding ground. Slope the surface of the floor toward the door. For a one-story building a 6-inch reinforced wall is strong enough. With a reinforced concrete roof, the cement will be protected from all possible danger of dampness.

Since Portland cement weighs practically 100 pounds per cubic foot, the beams of the floors elevated above ground must be heavy and be supported at frequent intervals by concrete piers. If window openings are necessary, do not use sash. A strong door hinged at the top and capable of being fastened on the inside is much better for keeping out dampness. Often the building has a solid or skeleton lining on the inside, for reasons given

under directions for storing cement. It should be well sway-braced on the inside to prevent springing of cracks or bulging.

The size of the house is dependent upon the extent and character of the dealer's trade. An average carload of Portland cement contains about 175 to 200 barrels of four bags each. In determining the necessary size of the cement sheds, consider that each bag of cement stored will occupy one cubic foot. Do not build too small. There is an increasing demand everywhere for Portland cement and the trade of local dealers is far surpassing expectations.

The character of the trade has much to do with fixing the size of the storage house. Especially dealers who supply contractors should have sufficient room to keep every shipment separate; for cement used by contractors and builders must often pass a seven or twenty-eight-day test before being used. Moreover, every cement storage house should be large enough to have aisles between the piles of various shipments, so that cement may be removed from storage in the same rotation as it was put in.

Storage for Users of Cement.

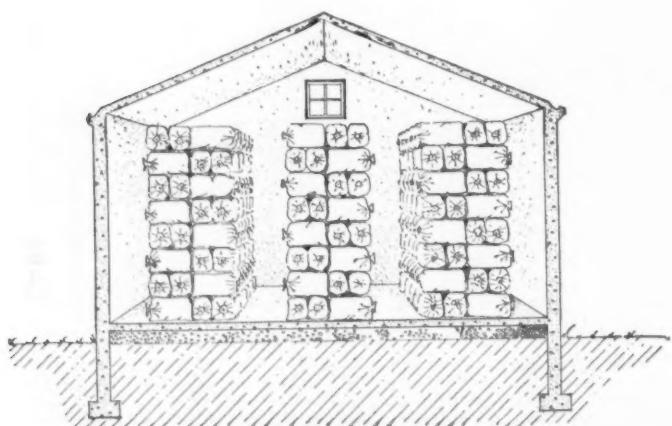
Many users of Portland cement need to store it only for the short interval between the time of hauling it from the dealer and using it in the concrete work. Any building with a good roof, tight side-walls, and a dry floor will do. Make a temporary double floor by means of small beams or logs and loose boards. See that driving rains or damp air cannot reach the cement.

Directions for Storing Cement.

Portland cement weighs nearly 100 pounds per cubic foot, therefore judgment must be exercised in loading the floor. Likewise, on account of its weight and possible damage from dampness, do not pile the cement against the side-walls of the building unless the house is full-lined or skeleton-lined on the inside. Store the cement so as to leave an open space or an aisle along the side-walls and aisles at places necessary to separate shipments. Get rid of all possibility of the cement piles toppling over by laying the bags, as a mason would say, "headers and stretchers," that is, alternately lengthwise and crosswise, so as to tie the pile together. Examine the building frequently to see that there are no leaks in the roof or side-walls.

Even on the work, never pile cement on the ground or on bricks. Throw down a few blocks, lay boards upon them and make a dry floor for the cement. Have just enough cement on the work to keep things going. A good tarpaulin is handy to cover up the cement in case of a sudden shower. Always buy cement from the dealer who has a dry storehouse. If the cement in the bag has been wet, it is hard as a rock; do not use it under any circumstances. However, do not mistake lumps caused by pressure in the storehouse for "set-up" cement. Such lumps crumble easily and the cement is perfectly good. Take care of the Portland cement just as carefully after receiving it as a good dealer does, and, properly mixed with sand and stone or gravel, it will yield a building material proof for all time against fire and repairs.

C. A. Davis and G. A. Wahl will overhaul their tile and block factory at Edinburg, Ill.



CROSS-SECTION OF CONCRETE STORAGE HOUSE WITH CEMENT CORRECTLY PIRED.



CEMENT ON THE WORK PILED PROPERLY ON WOODEN PLATFORM.

ROCK PRODUCTS

BRITISH METHODS

Of Manufacturing Portland Cement Compared With Methods in Vogue in the United States, By Our London Correspondent.

London, March 10.—Originally invented in England some three-quarters of a century ago, the British makers of Portland cement adhered solidly to old-fashioned methods for some decades. These have at last had their day, and it has been only within the past ten years that the British cement maker has awakened to the seriousness of foreign and home competition. For some years we have been actively engaged in building modern cement works and putting down up-to-date plants in our obsolete factories, with good results.

One of the Thames tunnels, constructed in 1828, was the first engineering work of importance in which Portland cement was used—the price at that time, by the way, was \$6.10 per cask at the works, and today a much superior quality product can be purchased at 98 cents per cask, so much have the conditions of the industry altered in the past three-quarters of a century.

The term "Portland" is limited to a hydraulic cement containing a large percentage of lime, and at once distinguishes the valuable constructive material bearing that title from other cementitious substances. The British Standard Specification defines Portland cement in the following terms: "The cement shall be prepared by intimately mixing together calcareous and argillaceous materials, burning them at a clinkering temperature and grinding the resulting clinkers."

The centers of the manufacture of Portland cement in Great Britain are well distributed over the country. The normal size of a British factory is one having an output of some 500 to 1,000 tons of Portland cement per week, and in this country alone we have some eighty cement companies, with a total output of some 3,000,000 tons of cement per annum.

Portland cement can be produced from any raw materials containing constituents capable of yielding by calcination the silicates and aluminates of lime, which form its chief components, and the necessary constituents of these raw materials are lime, silica and alumina. Small additions of iron oxide are desirable for fluxing these materials.

In manufacturing Portland cement, carbonate of lime and clay are first efficiently and accurately amalgamated in certain fixed proportions, either by the addition of water to the raw materials or by the fine grinding and mixing of the same in their dry state.

The composition of a prepared mixture of these raw materials should be roughly three parts of chalk to one of clay. Now the various raw materials employed in the manufacture of Portland cement at the present day may be described as follows:

In the Thames and Medway districts the chalk formation on the banks of these rivers is quarried and this material is mixed with the deposits of mud found in the estuaries and creeks.

The chalk marls around Cambridge have been well proved to be eminently suitable for the manufacture of a first-class quality cement. The "marl" is a deposit of calcareous and argillaceous material found at the base of the local chalk. The chalk marl of Cambridgeshire, though the relative quantities of chalk may vary from yard to yard in depth when testing on the face of the quarry, contains in the aggregate about the same proportion of calcareous and clayey material as is obtained artificially by the mixture of chalk with alluvial mud in the Medway Valley. Therefore, along the outer edge of this chalk marl, cement works have of recent years proved the value of the Cambridge deposit from a cement-making point of view.

In the cement-making districts of Rugby and South Wales we have the well-known Lias formation of limestone and shale, and this is successfully treated for the manufacture of Portland cement. The thin layers of these materials with their variation in composition must, similarly, be very accurately and efficiently dealt with. In working the Lias formation it is found that the preponderance of shale in proportion to limestone (which is generally found to contain 78 to 85 per cent. of carbonate of lime) renders the cost of working heavy, because of the removal of the surplus clayey material not required in the manufacture.

On the Tyne, Wear and Tees, and in the north of England generally, Portland cement is manufactured from the chalk imported from the Thames, Medway, or Sussex districts, and this is mixed with a local clay found on the site of the works. From this mixture a good quality cement is manufactured.

"In the United States we understand most of the cement produced is from the Lehigh Valley argillaceous limestone and which contains rather more clay than is required for a correct mixture. To this a small amount of pure limestone, usually 10 to 20 per cent., is added to bring the mixture up to the necessary percentage of calcium carbonate required in the manufacture.

In Germany the raw material consists of chalk marl.

The primary conditions of any method of Portland cement manufacture are that the raw materials shall be (1) correctly proportioned, (2) very finely comminuted and (3) thoroughly mixed.

The proportions of chalk and clay must be kept to a standard as closely as possible, work which at the present time in the most successful cement works is carried out under the supervision of the works' chemists.

The reduction of the raw material depends chiefly upon their character, so that the details of the methods adopted by manufacturers for grinding generally vary with the raw materials used.

There are two principal methods of reducing and mixing the raw materials, namely:

Firstly, by the "Wet Process," applicable only to soft materials, the correct quantities of the raw ingredients being ground and mixed by the aid of a considerable amount of water.

Secondly, the "Dry Process," in which the perfectly dry materials are ground together to an impalpable powder or "flour," and subsequently mixed to correct chemical proportions.

The next stage in the manufacture of Portland cement following the scientific and mechanical preparation of the raw material is that of burning at a high temperature, or calcining, the raw product at a point of slight vitrification, resulting in what is commonly called a cement "clinker."

The proper degree of burning is indicated by the formation of a dense greenish-black clinker when coming from the kilns. Light-burned clinker is brownish and soft, while over-burned clinker is fused and slag-like.

The aggregate temperature in the process of calcination shows that for normal Portland cement burning a heat is required in the kiln amounting to 1,400 deg. Centigrade, or 2,500 deg. Fahrenheit. This temperature is variable, according to the percentage of carbonate of lime contained in the raw materials, namely, the higher the proportion of lime the higher the temperature which is necessary to produce complete diffusion in combination with silica.

The kilns for burning the raw materials are always constructed for either an "intermittent" or "continuous" process. The intermittent kilns require loading and drawing and demand the shutting down of the kiln during the drawing operation. This method of manufacture is one that will soon be discarded.

But in the continuous kilns, the burning of the raw material proceeds without a break, and the drawing of the clinker takes place at the same time without interruption, thus making a continuous process.

In the category of continuous kilns we come to the process of burning by the rotary kiln, which has been lately brought into use. The manufacture of cement by the rotary kiln may be said to have revolutionized the industry, and this method of burning the raw materials is perhaps the most scientific and practical invention that has been introduced into the manufacture since Portland cement was first known.

The rotary kiln consists of a slightly inclined steel or wrought iron cylinder, usually from 100 to 150 ft. in length and 6 to 8 ft. in diameter, and is inclined to the horizontal at about 1 in 30.

The kiln is lined with radial firebricks, some 9 in. in thickness, and the long cylinder is mounted on tyres running on rollers and slowly rotated by gearing.

The cement-making materials are continuously fed into the kiln through a pipe at the upper end in the form of either liquid mud or dry powder, according to the process adopted in preparing and mixing the raw materials. Finely ground coal is almost always used as fuel, and this is introduced into the lower or outlet end of the kiln by a jet of air issuing from a blast fan.

The raw material, as it gradually descends into the zone of heat generated by the perfect combustion of the finely ground coal fed into the cylinder from the opposite end, parts with any carbonic acid, forms little rounded balls which reach a nearly white heat in the lower third of the kiln, and finally

*[The total production of cement in the United States in 1911 was 77,877,236 barrels, of which the Lehigh district produced 25,924,516 barrels, approximately one-third of the total.—Ed.]

issues at the lower end as well-burned clinker in grains about the size of a large pea. The greatest heat is naturally near the fuel-jet or outlet end of the kiln. The hot clinker from the kiln is cooled either by being elevated to cooling towers or by rotary cooling drums.

Now to proceed with the manufacture of Portland cement, and whilst arriving at the succeeding and final stage in the process, we now have the grinding into an extremely fine powder of the clinker which comes from the kilns; and this process has exercised quite a large proportion of ingenuity during the past few years.

The true test of quality in a cement, today, is the fineness to which the cement is ground.

In modern works, in this country, the preliminary grinding of cement clinker is carried out by the ball mill, and from this mill the coarsely ground material is conducted to a tube mill, which finishes the fine grinding previous to storing the cement.

The finished cement is ground sufficiently fine to pass through a 76 by 76 mesh sieve with about 1 per cent. residue, and although finer graining is rarely demanded, it can be readily accomplished by the manufacturer if necessary, but this means a reduced output from the plant.

From the grinding mills the cement is conveyed into the stores, and after it has cooled down the material is ready for loading out at the factory.

As to the storage of Portland cement, it is generally considered that the longer the cement is kept in stock the more reliable it is to be found in use; but the modern product of today's manufacture requires neither storage nor aeration to provide and insure the success of its quality.

CEMENT MERGER PERFECTED.

Fifteen cement companies in the Missouri, Kansas, Oklahoma and Texas field will be operating under a merger in thirty days. The name of the merger company is to be the Central Portland Cement Company of West Virginia and its authorized capital is to be 45 million dollars. These are to be the officers:

L. S. Mitchell, St. Louis, treasurer of the Iola Portland Cement Company, president.

Adam L. Beck of the Oklahoma Portland Cement Company at Ada, vice-president.

Frank E. Tyler of the Dewey Portland Cement Company, vice-president.

A. Steinmetz of the Western States Portland Cement Company, secretary.

The plans for the merger and the officers to be elected were agreed upon March 14, at a meeting in the offices of Hiram Norcross, Kansas City, an attorney who has conducted the negotiations among the fifteen companies the last three or four months. The headquarters of the merger company are to be in Kansas City. Some of the plants are to be dismantled, but which ones has not been determined.

"All except one company has agreed to the terms of the merger," Mr. Norcross said. "That company's directors have not met yet and I anticipate no trouble from that source. I think the merger company will be operating the several plants in the next thirty days. What plants are to be dismantled is a matter to be worked out by the active management."

These cement companies are in the merger:

Iola Portland Cement Company, United Kansas Portland Cement Company, Kansas City Portland Cement Works, Altoona Portland Cement Company, Great Western Portland Cement Company, Monarch Portland Cement Company, Ash Grove Lime and Portland Cement Company, Western States Portland Cement Company, Fredonia Portland Cement Company, Oklahoma Portland Cement Company, United States Portland Cement Company, Texas Portland Cement Company, Dewey Portland Cement Company.

The United Kansas Portland Cement Company owns three subsidiary operating plants at Iola, Neodesha and Independence, Kansas.

St. Joseph, Moberly and St. Louis tried to land next year's convention. St. Louis proved the winner. After the election of officers, the engineers adjourned to attend the N. A. C. U. Convention and the following day they were guests at the Cement Show.

INVESTIGATE THE EMPIRE.

The Chicago Tribune of March 15 says:

"Investigation into a new alleged stock selling fraud in Chicago has been started by the government authorities. A number of Indiana men have appeared under orders from Gen. James E. Stuart, chief postoffice inspector, to testify regarding their purchase of \$1,000 lots of stock in the Empire Portland Cement Company, with offices in the Rector building.

"According to these witnesses, representatives of the company have operated through northern Indiana, selling the stock on the assertion that the company owns valuable patents for cement manufacture and is about to begin operating. The witnesses allege there have been no efforts toward manufacturing."

"It is said the mails were used to describe the company's condition and prospects. It is understood offices also were operated in Cincinnati and elsewhere."

"Among the men buying the stock in fat \$1,000 share lots were J. B. Martin and J. P. Sanders, of Elkhart, Ind.; G. W. Wheymer, Goshen; Chris Knepfle, Bremen, and L. A. Palmer, Ligonier. Martin, a lumber dealer, already has testified and the others will be called shortly. Arthur G. Marshall is local manager of the company."

NEW YORK CEMENT NEWS.

New York, N. Y., March 20.—There has been little in the way of improvement to note for the cement industry in the East during the past month and conditions are still quite discouraging and far from satisfactory from any viewpoint of the manufacturer. The production has been somewhat curtailed of late and the consumption has at the same time increased largely. Stocks are now being gradually worked off and the outlook for the industry is better than it has been for some time past. Mills cannot make money at the present prices and improved conditions will, it is needless to state, find a welcome with the trade.

J. R. Morron, president of the Atlas Portland Cement Company, who has just returned from a three months' absence in Europe, says:

"Prices of cement at present are unduly low. They do not allow for an adequate return to the manufacturer. We are, however, satisfied with them under the circumstances."

"The minimum price of the Atlas company is 65 cents. Some concerns are selling at 55 and 60 cents, but we do not complain. Our policy is to keep prices on a stable basis, not charging 65 cents today and 75 or 80 cents tomorrow. We are willing to take contracts for some months ahead on the current basis."

"There has been a big overproduction of cement, but the accumulation is being gradually worked off, so that the outlook for the manufacturers is more encouraging. The law of supply and demand must govern prices and I do not believe much in any other price-fixing theories."

G. A. Molitor, of the Northampton Portland Company, said: "The local cement situation continued quiet during the past month, although inquiries emanating from consuming sources were more favorable and more interest was shown by the dealers. With the advance of the spring season traders are anticipating improvement in the building materials market and look for the advance of prices for cement and other commodities."

SAN FRANCISCO CEMENT NEWS.

San Francisco, March 15.—Comparatively low prices still prevail in the local market, though as far as can be learned there is no indiscriminating slashing of values by Coast manufacturers, and the general demand is a little better than in January. The movement from California to Oregon has been resumed on quite a large scale, but many large contracts are temporarily held up. With a good rain in the next week or two, manufacturers look for at least a normal year, but meanwhile the situation is rather critical.

The overhauling of the Cowell Portland Cement Company's plant near Mount Diablo has been completed, and operations have been resumed at full capacity.

The Santa Cruz Portland Cement Company's plant at Davenport, Cal., has long been experimenting with the manufacture of white cement, which is in strong demand here for finishing purposes, selling at about \$7 per barrel. It is now announced that the experimental stage is past, the output in this line being equal to anything produced in the East, and manufacturing on a commercial scale is to be started this month.

Since the settlement of litigation regarding the San Juan, Cal., cement properties, the present owners, headed by J. C. Kemp VanEe, Crocker building, this city, have been making arrangements to put the plant into working condition, and it is understood that the installation of machinery will be started in about 90 days. Most, if not all, of the needed equipment was purchased a year or two ago, but the installation was stopped by litigation.

The Riverside, Cal., Portland Cement Company has taken a contract for 10,000 barrels of cement to be used in the Yuma, Ariz., irrigation project.

QUARRIES

A. Wilson, of the Clinton Point Stone Company, in reviewing the local crushed stone market, said: "There has been a good demand for crushed stone during the past month, in fact it has been earlier this season than it was at this time a year ago. The indications are that building work will start as soon as the weather permits. We expect an active spring season, as we have contracted for early deliveries. A large amount of public work is contemplated and this will require a heavy quantity of crushed stone, sand and gravel and other building materials. The City of New York has awarded contracts for the repaving of the streets of the four boroughs. This work will necessitate the use of large quantities of crushed stone. Prices are firm and are stronger than they were a year ago."

The Clinton Point Stone Company has removed their offices to the Whitehall Building, 17 Battery Place, New York City, where they occupy larger and more commodious quarters.

A BIG BLAST.

Tenino, Wash., March 17.—One of the greatest blasts ever fired on the Pacific coast was set off this afternoon at the quarry of a sandstone company. Forty-five thousand pounds of black powder



L. H. HAWBLITZ, SEC. OHIO STATE STONE CLUB.

and 1,200 pounds of dynamite were used. It is estimated 1,000,000 tons of sandstone was shattered and moved by the discharge.

The explosion was carried out with perfect safety, the only damage being to the company's buildings. The powder was placed in two tunnels of 150 and 186 feet and seven laterals of 50 feet each. It was fired by Major J. B. Cavanaugh, in charge of the government's Pacific coast engineering department, by a battery located 1,500 feet distant. The stone will be used on the government jetty at Gray's Harbor.

Hundreds of visitors from the principal Northwest cities witnessed the novel sight. A banquet by the Tenino Commercial Club followed.

The Marble Hill Crushed Stone Company, of Joliet, Ill., has been incorporated with a capital stock of \$15,000 to do quarrying and crushing stone. The incorporators are Herman Greenberg, Albert E. Markgraf and John H. Savage.

The Rock Construction Company, of Port Arthur, Tex., has been incorporated with a capital stock of \$2,000. The incorporators are J. M. Plyler, L. W. Rook and Joseph Bishop.

The Richland Quarry Company, of Houston, Tex., has been incorporated with a capital stock of \$10,000. The incorporators are Travis Holland, V. R. Currie and H. R. Hughes.

PITTSBURGH QUARRIES.

Pittsburgh, Pa., March 20.—Stone men have been tied up exceptionally tight this winter owing to the record-breaking cold weather. All plants are down. A little quarrying is being started this week, but the ground is frozen so hard that operations are dangerous and difficult, and little will be done until the sun shines in earnest. The outlook for road stone work is the best that it has been for years. Bridge stone also will be in excellent demand, and architects report business operations which will require fine stone work more numerous than since 1907.

The Deckers' Creek Stone & Sand Company is installing machinery at its Sturgisson plant near Morgantown, W. Va., which will more than double its output there.

The Evan Jones Stone Company has been formed with a capital of \$5,000 by Daniel E. Jones, Evan Jones, Thomas O. Jones, William A. Jones and others of Pittsburgh, Pa.

The Campbells Ledge Stone Company has been incorporated at Wilkes Barre, Pa., and will have a large mine in Luzerne county, Pa.

The Xenia Casting Stone & Manufacturing Company, which is manufacturing a new block stone from crushed lime stone secured near Piqua, O., has been organized with Charles Edwards as secretary and manager. The company's office is in Xenia, Ohio, and it is arranging to manufacture this building stone on a large scale this year.

Russo Brothers & Co. is a new concern at Scranton, Pa., which has been formed for the purpose of quarrying and manufacturing stone, cement, marble and ballast. Its members are A. F. Golden, W. F. Magee, and M. and A. N. Russo.

The Conewango Trap Rock Company has been formed at Williamsport, Pa., by R. Neilson, Jacquard Garrett, D. Tinsman and George L. Miller to quarry flag and crushed stone and manufacture ballast.

The New York Trap Rock Company, of Rockland Lake, N. Y., was incorporated recently with a capital of \$1,000,000, to quarry and sell trap rock and crushed stone. Incorporators: William P. Foss, Nyack; Jacob E. Conklin, Haverstraw; James G. Patterson, Pittsburg; James C. Dysart, Hollidaysburg, Pa.; Myron H. Wilson, and Mortimer D. Wan-dell, New York City.

MEXICAN QUARRIES.

T. C. Hamm, American consul at Durango, Mexico, has this to say about stone quarrying in his section of the country: "Quarrying in the state of Durango is carried on to the extent of supplying the local demand for building and paving stone, etc. A soft, porous rock of volcanic origin known as rhyolite tuff is quarried. This stone is so very soft that no machinery is required in its extraction, blasting powder and crowbars being the only implements in use."

The highway commissioners of Ashton township, Lee county, have purchased a two-acre tract near Ashton and will open a quarry for the purpose of securing stone to build hard roads. The sum of \$22,000 will be spent on improvements this year.

The Cleveland Stone Company, of Cleveland, Ohio, has increased its capital stock from \$3,000,000 to \$4,000,000.

Charles Wade, an experienced quarryman, is now the new manager of the Queen City Quarry Company, at Alton, Ill.

PACIFIC COAST QUARRIES.

San Francisco, March 15.—Several large projects for the improvement of existing quarries and the development of new ones have been figuring for the last month, but most of the work is temporarily held up, as present conditions do not encourage new investment in this line. There is a good demand for rock in the larger cities, but this is not enough to make much impression on the present output, and little important business is coming up in the country. The largest business in prospect is the contemplated state highway improvements, but little progress has been made toward carrying out these plans.

The Independent Stone Company, operating rock quarries at San Diego, Cal., is enlarging its plant to three times the former size. The company has purchased the town plant and the Spring Valley plant, and will rebuild the latter at a cost of \$40,000, giving it a capacity of 1,000 tons daily.

The Riverside Quarry has been incorporated at Seattle, Wash., with a capital stock of \$250,000, by C. H. Upper, A. C. Luetgert and others.

ROCK PRODUCTS



The National Lime Manufacturers' Association

Meets Semi-Annually.

OFFICERS.

William E. Carson, Riverton, Va.	President
King McLanahan, Hollidaysburg, Pa.	1st Vice-President
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C. W. S. Cobb, St. Louis, Mo.	Treasurer
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NEW YORK LIME NEWS.

New York, N. Y., March 18.—A slight improvement has been noted in the demand for lime during the past month, coincident with the approach of milder weather. Dealers are preparing to meet the heavier demand which they expect to come across in the next month or two from inquiries received within the last two weeks. February building returns for New York City and the East as a whole were decidedly favorable and the spring will undoubtedly be a very good one with the building materials here. Lime for agricultural purposes will also be in demand and taking everything into consideration indications point to a better run of business this spring than during the same period last year.

Foster F. Comstock, president of the Comstock Lime and Cement Company, reviewing the local cement market, stated: "We have experienced a slight improvement in the demand for lime during the past month, and look for a better inquiry as the weather becomes more favorable. In our opinion we look for a fair business to materialize in the spring and summer months. Dealers with whom I have spoken are optimistic in regard to future business and none of them has allowed the old chestnut regarding the disquieting tendencies usually accompanying the presidential year to bother them."

E. B. Morse, of the Frank E. Morse Company, stated that the demand for lime was better during the past month than it has been for some time past. "We are now preparing for the spring season to open, and with the approach of the warm weather we expect a gradual improvement in the demand for lime," he said.

PITTSBURGH LIME NEWS.

Pittsburgh, Pa., March 20.—Lime concerns are getting their plants in readiness for a very busy year. Very little is doing just now. Agricultural lime business promises to be larger than ever before as farmers have been educating themselves in this line of fertilizing for the past two years.

Eli Z. Zinn of York, Pa., has bought fifty acres of fine limestone land near that place for \$130,000. He is a member of the York Stone & Supply Company and active developments in the new quarry will proceed at once.

The Pittsburgh Limestone Company has bought rich limestone deposits near East Brady, Pa., and is arranging for additions and improvements to cost \$300,000. A power plant and crusher will be installed and the present capacity of the plant will be increased to 3,000 tons daily.

The Lisbon Lime Company of Lisbon, Ohio, has recently completed two large kilns and two tramroads over a mile long. Its coal bank will be put into operation as soon as the limestone quarries start to work. The material will go to the mills by gravity. The shipping rooms and cars will be on the same level and the product can be handled expeditiously.

The Apollo Lime & Plaster Company will vote on April 3 on the matter of increasing the indebtedness of the company. This is one of the leading concerns in that district.

The Geneva Gardens & Lime Company, of Geneva, N. Y., has been incorporated to manufacture and deal in cement and carry on a real estate business with a capital stock of \$225,000. The incorporators are J. M. Kennedy, H. F. Nester and L. G. Hoskins, all of Geneva, N. Y.

USES OF LIME

Many Varied Methods of Employing the Material in the Arts, in Chemistry and Manufactures.

Since ROCK PRODUCTS established this department, giving in detail the various uses of lime, assurances have been received of the helpfulness it has been to the dealer. It is gratifying to know that the dealer wants such information, as it indicates he is alive to the possibility of selling more lime through accurate information concerning the many various uses of it.

There are few mineral products that have so wide a variety of uses as lime. Nearly half the lime manufactured in the United States is used as a structural material, and the remainder, amounting to about 1,750,000 tons, valued at about \$5,500,000, is used for chemical purposes. The principal uses which lime has in building operations are in lime mortars and plasters, in gauging Portland cement mortars, concrete and gypsum plasters, and as a whitewash. Both quick and hydrated lime are used in building operations.

The limes most commonly used fall into the following three general classes, depending upon the chemical composition of the original limestone: (1) high calcium lime, containing 90 per cent or more of calcium oxide (CaO); (2) magnesian limes, containing 5 to 25 per cent of magnesia (MgO), the remainder consisting essentially of calcium oxide and impurities, such as silica, alumina, and iron oxide. Recent tests have indicated that the magnesian limes are best suited to structural work, and high calcium limes to chemical purposes, but for certain purposes the reverse of this rule is true, and in many branches of industry either type of lime is equally well applied.

The chemical uses of lime are much more varied than the uses of lime in building. A number of the industries that are large users of lime are given below, together with the special purposes served by lime in each industry, and the kind of lime most suitable to such purposes.

Agricultural industry:

- As a soil amendment, c. m.
- As an insecticide, c. m.
- As a fungicide, c. m.

Bleaching industry:

- Manufacture of bleaching powder, "Chloride of lime," c.
- Bleaching and renovating of rags, jute, ramie, and various paper stocks, c. m.

Caustic alkali industry:

- Manufacture of soda, potash, and ammonia, c.

Chemical industries:

- Manufacture of ammonia, c.
- Manufacture of calcium carbide, calcium cyanide, and calcium nitrate, c.
- Manufacture of potassium dichromate and sodium dichromate, c.
- Manufacture of fertilizers, c. m.
- Manufacture of magnesia, m.
- Manufacture of acetate of lime, c.
- Manufacture of wood alcohol, c.
- Manufacture of bone ash, c. m.
- Manufacture of calcium carbides, c.
- Manufacture of calcium-light pencils, c.
- In refining mercury, c.
- In dehydrating alcohol, c.
- In distillation of wood, c.

Gas manufacture:

- Purification of coal gas and water gas, c. m.

Glass manufacture:

- Most varieties of glass and glazes, c.

Milling industry:

- Clarifying grain, c. m.

Miscellaneous manufactures:

- Rubber, c. m.
- Glue, c. m.
- Pottery and porcelain, c. m.
- Dyeing fabrics, c. m.
- Polishing material, c. m.

Oil, fat, and soap manufacture:

- Manufacture of soap, c.
- Manufacture of glycerine, c.
- Manufacture of candles, c.
- Renovating fats, greases, tallow, butter, c. m.
- Removing the acidity of oils and petroleum, c. m.
- Lubricating greases, c. m.

Paint and varnish manufacture:

- Cold-water paint, c. m.
- Refining linseed oil, c. m.
- Manufacture of linoleum, c. m.
- Manufacture of varnish, c. m.

Paper industry:

- Soda method, c.
- Sulphite method, m.
- For strawboard, c. m.

As a filler, c. m.
Preserving industry:
Preserving eggs, c.

Sanitation:

- As a disinfectant and deodorizer, c.
- Purification of water for cities, c.
- Purification of sewage, c.

Smelting industry:

- Reduction of iron ores, c. m.

Sugar manufacture:

- Beet root, c.

- Molasses, c.

Tanning industry:

- Tanning cowhides, c.

- Tanning goat and kid hides, c. m.

Water softening and purifying, c.

HYDRATED LIME ON THE FARM.

Lime in any form is not pleasant to handle on the farm. Formerly farmers had no device, nothing but lump lime in bulk, slaked out crudely and spread with a shovel, and for this reason many farmers would not use lime. About ten years ago hydrated lime was offered on the market. Farmers found they could buy it in small lots and could apply it with the drill. They took to it at once and began testing it, and they found that small applications gave excellent results and that it could be stored and be on hand when wanted, and that in every way it was a convenient and economical form of lime to use.

Before the advent of hydrated lime, lime was applied in very large quantities, 100 to 200 bushels per acre, and renewed after eight to ten years, the use of hydrated lime has shown and proved that small quantities of lime applied frequently is better practice than large amounts applied at longer intervals. This is especially true on open, leachy soils, where any surplus of lime is carried away in the drainage water and lost.

Recently many articles have been going the rounds of the farm press, claiming that burned lime is injurious to humus plants. These writers might learn something they don't know about lime if they were to take a trip into sections where this form of lime is used extensively and see farmers drill hydrated lime directly with the seed, with never a bit of injury. Tests have been made along this line and it has been found that hydrated lime drilled with the seed not only quickened germination but carried the plants through to harvest in better shape. And yet we see bulletins saying, "Don't drill lime with the seed."

Of course fresh burned, ground lime should not be drilled with seed, as it has not been slaked and might possibly affect the seed, but that is another material and another story entirely.

Hydrated lime has proved itself in actual practice and grown steadily in favor until now thousands of farmers are using it with satisfaction. It has been the means of inducing hundreds of farmers to use lime that otherwise never would have touched it. The fact is, it has done more to educate farmers to the use of lime than any other agency, not excepting the valuable lime bulletins published. A broad statement, but a fact.

While hydrated lime has been doing things for the farmer, and made its reputation, it has also gathered some opposition. The fellow with something else to sell, says it isn't much good, and the fool agents who are not familiar with the subject often make outlandish statements which sometimes prove detrimental to hydrated lime. And the scientific people, who look at it from the laboratory point of view, and have no knowledge of what it does in actual practice, their cry is that farmers should buy it cheap because it contains some moisture, often leaving the impression that water is used to adulterate. Water is essential to hydrated lime just the same as water is necessary to everything grown and sold off the farm. Would these people advise farmers to sell their potatoes (in which there is about 75 per cent moisture) on a basis of the moisture content? At this rate \$1.00 potatoes would be worth about 25 cents per bushel, and would be a great thing for the consumer. But where would the farmer come in? And potatoes are not the only thing; everything raised on the farm contains various quantities of water. Eggs, 74 per cent; milk, 86 per cent; oats, 20 per cent; rye, 15 per cent; turnips, 91 per cent; and so on all through the list. Flour contains about 15 per cent and bread about 30 per cent of water, and no one accuses the miller and baker of putting in water to adulterate. Water is simply an essential to all these products, and the cry that hydrated lime contains moisture is very far-fetched and trifling to say the least.

In 1900 there was practically no hydrated lime made for farm use; in 1906 there were thirty plants in the United States making hydrate for various purposes; in 1910 there were fifty-two plants in operation. Seems like hydrated lime must be a

satisfactory product. No monopoly, as some of the professors seem to think. Just a tried and proved economical form of lime for farmers to use.

JOHN S. STITT,
Blairsville, Pa.

PACIFIC COAST LIME NEWS.

San Francisco, March 15.—Manufacturers of a few favored brands of Pacific Coast lime are keeping busy, but the general market is hardly as active as it was a few months ago, and prices are a little below the average. The output in this district has been gradually increasing, and the impression is that production has gone a little ahead of requirements.

H. F. Bassett, who for some time operated the San Francisco Lime Company, holding the agency of the Roche Harbor Lime Company, a northern manufacturing concern, for San Francisco only, has sold out this business to E. H. Horton, with offices in the Monadnock building.

The Black Marble Lime Company of Enterprise, Ore., D. M. Cunningham manager, announces that it will install a quarry outfit during the spring.

CARSON LOVING CUP.

At the annual convention of the National Lime Manufacturers' Association at the Hotel Astor in



LOVING CUP PRESENTED TO WILLIAM E. CARSON, PRESIDENT NATIONAL LIME MANUFACTURERS.

New York, one of the pleasant incidents was the presentation of a beautiful loving cup to President Carson. This cup was a testimonial of regard from the members, given in recognition of President Carson's services to the association.

At the annual meeting of the Lake Shore Stone Company, Milwaukee, Wis., recently, all of the present officers and directors were re-elected. George A. West is president.

The Davis Construction Company, of Nowata, Okla., has been incorporated with capital stock of \$5,000. The incorporators are M. G. Branson, Hugh Branson and W. A. Davis.

The Monarch Construction Company, of Chicago, has been incorporated with capital stock of \$2,500 to do general construction work. The incorporators are Thomas McEnerney, Nicholas V. Fischer and Nick Koch.

The Consolidated Fire Proof Materials Company, of Manhattan, has been incorporated with a capital stock of \$100,000 to manufacture fire proof building materials, etc. The incorporators are R. E. Barrett, H. R. Nostrand and E. L. Shea, of Brooklyn, N. Y.

The South Michigan Brick Company, of Kalamazoo, Mich., is making preparations to begin operations at their plant soon. They already have booked some splendid orders and point with pride to a number of buildings in which their products have been used in the past.

TIFT SILICA BRICK & STONE CO.

The Tift Silica Brick & Stone Company, of Tifton, Ga., has issued a little leaflet telling the good qualities of Sand-Lime Brick and the methods of its manufacture. This company is producing a very fine quality of brick on account of the up-to-date methods of manufacture and the excellent quality of sand that is used. The company is sharing in the general prosperity of that part of the South, and scattered throughout the country are many beautiful structures made of its product.

The brick plant of the Tift Silica Brick & Stone Company is a model one and in many respects different from any other brick plant in the country. It is located in the very center of the famous "Sand Hills" of East Albany, Ga., where millions upon millions of tons of glistening yellow sand, in which there is not a flake of vegetable matter, clay or other undesirable substance, lies ready for use without any of the more or less expensive treatments nearly always found necessary. No ditchers, tram roads or other expensive equipment is necessary for securing this sand. This vast natural treasure house, one of the most remarkable geological formations in the South, enables us to manufacture our Silica Sand-Lime Brick very much cheaper than any other brick plant in the South can possibly manufacture them.

The materials used in the manufacture of these brick are of the very best quality; they are composed of silica sand and lime. The silica makes the brick insoluble by water and acids, thereby making a sanitary brick that will not disintegrate under the most extreme climatic changes.

In the course of manufacture each brick is subjected to an immense pressure, and afterwards they are held under a heavy steam pressure. As the result of this pressure the brick are very dense and show a very small absorption.

The plant is equipped with the very latest and most modern brick machinery, among which is a huge sixteen-mold rotary press, which not only turns out perfect brick but are great labor savers, thereby reducing the cost of labor.

The color of the brick is snow white, and when laid up in different colored ground non-staining mortars they produce a very beautiful effect.

The brick, on account of their density and non-absorbent quality, do not expand or contract. Consequently they are especially adapted for fire-walls, tunnel work, superstructures, foundations and for all underground work, especially sewers, as they improve with age, have great crushing strength, are low in porosity and are unaffected by acids.

On account of their uniform size, shape and color they can be economically laid and will produce a like face on both sides of an 8-inch wall; thereby saving the extra cost of plastering or ceiling the inside walls of a building. The regularity of their form and trim appearance makes an excellent inside wall, which will not fall in time of fire, as has been proven by various tests.

At the annual meeting of the Saginaw Sandstone Brick Company, Saginaw, Mich., held the latter part of January, it was decided to raise the capital stock from \$25,000 to \$50,000, and additions to the plant will be made which will increase the daily capacity from 25,000 to 50,000 brick. The former officers and directors were re-elected, as follows: President, J. L. Jackson; vice-president, C. C. Remer; secretary, S. S. Roby; treasurer, E. D. Church, and general manager, John C. Reinke.

The Washington Silicate Brick Company, Wilmington, Del., was chartered under Delaware State laws, February 13. Capitalized at \$250,000.

William Toepser has purchased the sand-lime brick plant at West Bend, Wis., and reorganized the company under the name of the Acme Brick and Sand Company. Preparations are being made to start the plant soon and William Moddus will be the new superintendent. Mr. Moddus is a man of very wide experience in the sand-lime brick industry and brings to his new position a thorough knowledge of the manufacture of sand-lime brick. It is safe to presume that the product of this plant will be the equal, if not the superior, of that which was turned out by the old plant.

MOTOR TRUCKS.

(Continued from Page 22.)

sion, or who does not put it on at all, or who puts on only on specification shows such a woeful lack of appreciation of the items of cost in truck maintenance that he is not to be trusted to make a serviceable machine in other respects. Place your reliance in the manufacturers who not only build the governor in as a part of the engine, but who also seals it so that it cannot be tampered with. This feature cannot be urged too strongly. It is all important.

Having selected a truck, the body is of next importance. I have already elaborated on the various bodies. I can only say that a dumping body is to be gotten, that preference should be given to the lightest and simplest type. There has been too much carelessness in attaching heavy bodies to trucks, which simply reduces the safe profitable loads that may be carried. Truck manufacturers do not in general make bodies themselves, but can give full information, and will make recommendations. Get a body approved by the truck maker, and if possible have him attach it and ship the truck complete ready to run. An iron clad guarantee as to total weight including accessories should be obtained from the body maker, and a similar guarantee from the truck manufacturer covering his bare chassis. Finally, observe the actual operations of this body in service by some owner who has used it for some time, and be sure that it is the type wanted. As one truck owner expressed it to me, "The body is half the game."

In regard to tires, the purchaser should get the experience of others as to what make to select, but in any event he should get the hard and fast guarantee of 8,000 miles. I should say in this connection that the average 3-ton truck has 36x4-inch dual tires on its rear wheels. These are probably sufficient when a light stake body is used, but the tendency is to put on a larger body and more or less frequently to overload, say up to 8,000 pounds, and while first grade trucks will stand this within reason, the tires will not. Accordingly, much annoyance will be saved if the larger tires are specified in the first place at a slightly increased cost.

The most important point in the selection of a driver is for the owner to get a man who has been with him for a number of years, and whom he knows to be a willing, conscientious worker. Probably the man should be a former teamster who has shown "road sense" and who is familiar with the deliveries. He should be sent to the factory or a branch for a couple of weeks to be broken in. An extra inducement of from 25c to 50c per day is sufficient. The owner should remember that the driver of a truck has an improved social status over the driver of horses, and advantage should be taken of this fact. I know of one instance where the driver has been transferred to a truck without increase of wages, but promised a lump sum at the end of the year if his record is good. Such a scheme, if carefully worked out as to mileage, etc., is good. In no case have I found the increase to be greater than 50c per day. A large increase gives a man a false idea of his own importance, and often results in decreased efficiency. It is better that the position should be just a little higher than the teamster's, so that there will always be competitors for the position of truck driver. Such a condition of affairs is very salutary to the efforts of the truckman. The color or nationality of the driver is of no importance, as in one case the best driver was a negro, and in another case, an Italian.

Though I found several instances where a helper is regularly provided the driver, I feel this practice should be discouraged. Local conditions largely govern this feature, but the owner can help by being sure that the body he purchases can easily be hoisted by one man. One owner even stated that his truck lost in efficiency 20 per cent when a helper was added as an experiment, and another stated that it was his experience in unloading, that if there was a helper, the workmen on the job would do nothing towards unloading, but if the driver was alone, often three or four men would jump in and help him. This is particularly important where bagged material must be handled into a building or a contractor's shanty.

Garaging and inspection must next come up for discussion. In no case do I find the truck put in a public garage. Accommodations vary from open sheds to specially built fire proof garages. Really the only fundamental point involved is to have the gasoline and other supplies handy so that the driver will spend a minimum of time in charging and lubricating his machine. Warmth in winter is of absolute necessity. A concrete floor to facilitate weekly washing is desirable. There are trucks now-a-days which are so excellent that they will serve best if left alone except for very careful lubrication. It is desirable, however, to have weekly, or bi-weekly inspection by an expert just to see if the driver is treating his machine properly. This inspection can usually be provided for before purchasing, and if there is a local agency, it will be done free of cost for the first year. Under such circumstances the private garage is preferable.

The life of a truck and the frequency and extent of its repairs are largely dependent on the conscientiousness of the driver both in driving and in lubrication. However, I have run across some extremely favorable records in this respect. One 3-ton machine in service for 2½ years ran 20,000 miles with one overhauling and one new set of chains and sprockets. Another has run 15,000 miles in much less time, and has not yet been touched. It seemed to need only a little work on its steering connections. Its chains and sprockets appeared to be in excellent condition. This truck had an exceptionally careful driver, as was witnessed by the fact that another truck owned by the same company had already had a new set of chains with much less usage. But it may be safely said that with reasonable intelligent care such as would be given valuable horses, the modern high class truck has a long life before it with a minimum of repairs, and that the figures set down in our cost of operation are conservative.

Figures on gasoline consumption are quite variable. On a 3-ton make the variation was from 3 to over 5 miles per gallon. However, in the worst condition the owner was troubled with carbon in his cylinders, so that it was obvious that the carburetor was making too rich a mixture. I advised him to reduce the gasoline, which should not only improve the economy, but greatly reduce trouble from carbon deposits in the cylinder. I believe that a 3-ton truck will travel close to 5 miles per gallon, and that a 5-ton truck should do better than 4 miles. This is for average

MARCH 22, 1912

ROCK PRODUCTS

conditions, but even these figures will vary considerably, the lowest encountered being $\frac{1}{4}$ and the best over 5 miles, both being 5-ton trucks of different makes operated by the same owner in the same city.

Lubrication of engine should be a minimum, in fact as little as the manufacturer will approve of. This keeps the engine in the best condition, helps to prevent carbon deposits and obviates ignition troubles. All other parts, clutch, gear boxes, steering knuckles, spring shackles, etc., should be carefully watched. It is these small things, if neglected, that go to make up the large sum of truck replacements. This is particularly true of bearings not truly part of the mechanism, such as steering knuckles and connections, spring shackles and radius rods. Finally, the chains must be very carefully tended, cleaned and internally lubricated at proper intervals, as the cost of replacing chains and sprockets can very readily become a considerable item if neglected.

Truck accessories form an item deserving of considerable thought. Truck service is so severe that lamps, horn, etc., should be of the simplest and most rugged type, specially designed for truck use. Otherwise, the vibration will quickly ruin them. Mileages must be known, but speeds are unimportant. Therefore some rugged type of hub odometer is to be recommended rather than one on the dash with flexible shaft. Personally, I prefer the type placed in the hub cap, as this absolutely insures complete mileage records. All other types are subject to derangement.

For the man who is willing to go to the trouble of analyzing his conditions, I recommend a type of recorder which makes a time record of the truck operations, showing when it was running and when stopped. I consider such a mechanism as a valuable adjunct in securing best results. In general, the building supply man has been much too careless with his records so that I urge care and attention to this detail most strongly.

In conclusion it might as well be said that so far, the building supply man has not derived the benefits from motor trucks that he has a right to expect. But the fault no longer lies with the truck manufacturer, for he has now provided a machine that will successfully meet the arduous duty that our line of business imposes. And we should be very thankful to the motor truck for it has certainly made us analyze our methods of handling our teams. Magnifying our faults as it has, it has been of material service to us already. Now let us make it serve us to even a greater extent.

AUTO TRUCK COSTS.

Per Mile (Operating Cost).

Tires	\$0.061
Overhauling and repairs	.03
Depreciation	.075
Gasoline	.03
Lubrication	.004
Total	\$0.200

Per Day (Fixed Cost).

Interest \$5,000.00—5% 250 working days	\$1.00
Insurance (4 kinds)	.60
Garaging, inspection, etc., \$25.00 per month	1.00

Driver	2.00
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Total	\$4.60
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Elapsed Time.

Loading in yard	20 minutes
5 mi. average round trip, at 9 mi. per hour	35 "
Unloading	15 "
Contingency	5 "

Total	1 hr. 15 "
Trips per 10-hour day	8 trips
Daily mileage	40 miles

Mileage cost at 20 cents	\$8.00
Daily fixed cost	4.60

Total	\$12.60
4½ tons per trip=36 tons per day delivered	.35
Cost per ton	.40
Allowing 88% eff.	.44

Note—This table is not given as an exhibition of truck costs, but merely as an illustration of the method of calculating costs as outlined in this accompanying article.

The Integral Waterproofing Company, of Jersey City, N. J., has been incorporated to carry on a general contracting business with a capital stock of \$100,000. The incorporators are B. S. Mantz, L. H. Gunther and J. R. Turner, all of Jersey City, N. J.

The Fisch Contracting Company, of Newark, N. J., has been incorporated with a capital stock of \$25,500 to carry on a general building and contracting business. The incorporators are F. B. Munn, J. Fisch and D. Fisch, all of Newark, N. J.

John H. Brooks, of Beaver Falls, Pa., is placing equipment for a large brick plant at Eastdale, on the Beaver river, where he intends to develop this spring a considerable area of coal and clay from which high-grade vitrified brick will be made. The plant will be equipped with the best machinery to be found.

The Glass Brick Company is a junior industry for Pittsburgh. Its general officers are in the Keystone building, and Charles B. Lawton is head of the concern. The company had a very prosperous business in 1911, and is now shipping its glass brick to several outside countries. Mr. Lawton said recently: "We have shipped bricks to nearly every state in the Union and also into Canada; had we the capacity at our works for 50,000,000 brick per annum, we could have sold them all. We are preparing to double the already increased capacity, and could increase fourfold if we had the necessary capital."



WISCONSIN CLAY MEN MEET.

John Ringle, well-known brick manufacturer of Wausau, Wis., was elected president of the Wisconsin Clay Manufacturers' Association at the Twelfth Annual Convention held in Milwaukee, March 5 and 6. Mr. Ringle served as president two years ago and last year did excellent service as chairman of the Committee on Legislation. Other officers elected included: Vice-president, Oscar Zimball, Sheboygan; secretary, Prof. Samuel Weidman, Madison; treasurer, E. H. Korrer, Fond du Lac.

New standing committees for the year were appointed as follows: Railway rates, A. W. Hilker, Racine; E. H. Korrer, Fond du Lac; J. H. Hamilton, Grand Rapids; legislation and education, Prof. Samuel Weidman, Madison; Erwin Fricke, Manitowoc; W. J. Craney, Kenosha; publicity, F. Vogt, Milwaukee; William Fricke, Manitowoc; liability and insurance, F. L. Sanborn, Portage; S. Gunther, Port Washington; A. O. Wachter, Sheboygan; resolutions, Messrs. Brown, Korrer and Mantz; auditing committee, Messrs. Hilker, Ringle and Mower; nomination committee, Messrs. Sanborn, Zimball and Fricke.

Retiring President W. J. Craney, of Kenosha, urged the manufacturers to greater activity. He advocated the adoption of more modern methods of advertising in order that the clay men might not remain in the rear of the procession.

"While the last Government report does not show that Wisconsin is in the rear, manufacturers will have to make greater strides to reach the front ranks," said Mr. Craney. "Brick or clay ware has not taken its proper place in Wisconsin."

The report of the Railway Rate Committee showed that through its efforts rates on brick have been lowered from one-third to one-half of what they were a year ago, when they were higher in Wisconsin than in any other state of the Union. John Ringle, chairman of the committee, was presented with a handsome gold-headed cane in appreciation of his hard work in bringing about the favorable order from the Wisconsin Railway Rate Commission.

One of the most interesting addresses delivered before the convention was by C. P. Cary, Wisconsin state superintendent of schools, who outlined briefly the origin of the industrial education laws in Wisconsin. With reference to instruction in brick laying, Supt. Cary said that whenever there is a sufficient number to make it practicable, the local board of industrial education will make provisions for such instruction. The teachers, he said, will not only be men who know the theory of brick laying, but who have had practical experience.

Prof. F. T. Havard, Madison, Wis., spoke on "The Clay-testing Laboratory of the University of Wisconsin;" C. H. Solisberg, Aurora, Ill., on "The Preparation of Stony and Other Clays;" C. B. Platt, Van Meter, Ia., on "The Burning of Drain Tile and Brick;" L. T. Crabtree, Crandon, Wis., "The Present Outlook for the Clay Industries of Wisconsin."

The Committee on Liability Insurance reported that it had come to the conclusion that it would be inadvisable for the association to form a mutual liability insurance company to carry risks arising under the new Wisconsin workmen's compensation law, but that individual manufacturers were free to go in under the law if they deemed it advisable.

The Publicity Committee reported that it hoped to have a permanent building erected on the grounds of the Wisconsin State Fair at Milwaukee to be used for the exhibitions of the national resources of the state. The matter will be taken up with the State Board of Agriculture and it is hoped to have the building ready for use for the 1913 fair.

The following resolutions were passed:

"Resolved: That the Wisconsin Clay Manufacturers' Association heartily endorse the Wisconsin Advancement Association in its work of giving effective publicity to the many natural resources of the state, and especially to the undeveloped resources in agriculture and manufacturing in northern Wisconsin."

"Resolved: That we, as the Wisconsin Clay Manufacturers' Association, favor the establishment of a permanent exhibit of the products of the United States on the Panama Canal, incident to the opening of this canal to the world in so far as these concern the furtherance of the trade of the United States."

"Resolved: That the members of this association are urged to bring to the next convention samples

of their products for the purpose of forming a complete exhibit of Wisconsin clay wares.

"Resolved: That as the Milwaukee Auditorium Association is promoting an exhibit of building materials to be held in the Auditorium at some future time, this committee suggests that the association appoint a committee to co-operate with the Auditorium Association with the object of securing as many manufacturers of brick, fire proofing, roofing tile and kindred wares to exhibit their products, also, if possible, to bring it about to have such exhibit take place at a time when it will be convenient for this association to hold its meeting.

"Whereas: God, in His wisdom, has seen fit to remove from us by death, one of our honorary members and first secretary, Mr. E. R. Buckley, of Chicago, be it

"Resolved: That this association express its sorrow to the bereaved family of the deceased and that this association cause a copy of this report to be spread upon the minutes of this meeting.

"Respectfully submitted,

"Davis Brown,

"C. H. Korrer,

"G. B. Mantz,

"Committee on Resolutions."

BRITISH BRICK TRADE CONSOLIDATION.

London, March 10.—The rumors current a little while ago, regarding a proposed combination of brickmakers in the Midlands, have proved to be correct, it being now announced that a scheme has been drawn up and agreed whereby most of the firms operating in certain parts of Staffordshire and Worcestershire will become members of an organization formed to regulate prices and output. The intention is, of course, to endeavor to place the industry upon a more remunerative footing than at present, and in view of the fact that the combination will control an output of approximately ten million bricks per week, its influence should be sufficiently powerful to ensure success. There are still, however, several important firms whose adhesion has yet to be secured; and although it is believed that no difficulty will be experienced in securing their support, it would be unwise to count too surely upon the future until matters have been definitely arranged. It is anticipated that it will be possible to make an announcement to this effect in the near future. The immediate object of the firms who have come into the scheme is to prevent price-cutting, which has been very prevalent of late, and has been productive of serious results to the entire trade. The achievement of this purpose alone would justify the formation of the combine, but it is hoped that other advantages will also be secured.

SAN FRANCISCO CLAY NEWS.

W. S. McLean, of the Holmes Lime Company, reports a continued active business in Ione fire brick, which is extensively handled by this firm. The plant at Ione, Cal., he says, has been entirely rebuilt, the superstructure destroyed by fire last fall being replaced by a fireproof building. The company had accumulated a surplus stock of brick before the fire and was able to care for its normal trade during the rebuilding. Manufacturing has now been resumed and they will be able to take care of increasing requirements.

E. J. Willis, representing the Denny-Renton Clay & Coal Company, of Seattle, Wash., was recently in San Francisco endeavoring to open an outlet for his firm's increasing production of paving brick. He reported considerable encouragement in Oakland, but finds it impossible to introduce brick pavement in San Francisco under the present specifications.

The Illinois Silo Company, of Bloomington, Ill., which was incorporated with a capital stock of \$100,000, will deal in all kinds of silos, but will give considerable attention to the A. P. Grout vitrified tile silo manufactured at White Hall, Ill., by the White Hall Drain Tile Company. H. C. Morrow, who has been elected vice-president and manager of the silo company, is a leader in the White Hall industries. The following board of directors has been elected: W. H. Bowyer, George P. Davis, Charles L. Will, H. C. Morrow, George C. Heberling, C. C. Bowman, D. D. Leahy, Paul F. Reich, and D. T. Garber. Officers were elected as follows: W. H. Bowyer, president; H. C. Morrow, vice-president; D. T. Garber, secretary; H. C. Morrow, manager.

The Acme Brick Company, of Chicago, Ill., has increased its capital stock from \$5,000 to \$100,000.

The Helm Company, of New Richmond, Ohio, has changed its name to the Helm Clay Products Company.

The Louisville Fire Brick Company, Louisville, Ky., has been incorporated with a capital of \$150,000. Incorporators, K. B. Grahn, C. A. Parker and M. P. Dehoney.

CLAY SHOW

First Exhibition Under the Auspices of the International Brick and Clay Products Exposition Company Is a Great Success.

The first clay products exposition opened at the Coliseum in Chicago March 7 and continued to March 12. It was the culmination of an enterprise to advance the interests of clay products, especially brick, in construction. It was the most remarkable exhibition of the kind ever assembled, as it included every known type of clay manufactured. The purpose of the show, of course, was to educate the public as to the many varied uses of brick and other clay products in construction and to that end all the exhibits were arranged to show these things to the best advantage.

The exhibition was visited by many thousands of interested people during the progress of the show, and it is needless to say that the public now has a better idea of brick construction, both for residences and business houses and manufacturing plants, than it ever had before. In the center of the Coliseum stood a magnificent centerpiece contributed by the North Western Terra Cotta Co., consisting of four oriental pillars executed in clay, supporting a mammoth urn in which was a large fern. From this centerpiece radiated the aisles along which the exhibits were placed.

The center of interest, of course, was the brick bungalow at the north end, which of itself constituted a show worth coming miles to see; a house of two stories with brick walls and tile roof, with a brick fence surrounding with real trees in the yard and flower beds; the house completely finished, even to fixtures, painted and ready for occupancy, was constructed complete in the marvelous time of four days and a half. Every person who went to the show passed through this little house, which was equipped on the lower floor with beam ceilings, and it was said that it could be constructed for only \$3,000.00. The brick used in the walls were of the tapestry style of face, and even the chimney was of brick of that character. While this prize bungalow attracted much interest, of course there were many other things, which, while not so popular in character, were equally instructive. For instance, at the north end was a magnificent fountain against the north wall contributed by the American Terra Cotta & Ceramic Co. This fountain consisted of the most intricate design of terra cotta and brick work and vied with the bungalow in popularity.

Rush Bros., of Chicago, had a beautiful white tile pergola. This exhibit was much admired by everybody who saw it. Fish & Co., of New York, had a beautiful display of tapestry brick, which was most pleasingly arranged. The National Brick Co. had a house entrance made of fine face brick which was enhanced by various colored flowers arranged on the wall. Then the Chicago brick men had an aisle all to themselves, along which were arranged the exhibits of the various firms. We noted that Meacham & Wright were there with a grand display of the product handled by them, as was also the Wisconsin Lime & Cement Co., with the smiling Cormack in charge.

A matter of special interest to municipal officers and contractors, was the display of the National Paving Brick Manufacturers' Association. These manufacturers recognized that concrete is the essential factor in road building and is bound to be so in the future. Displays were to be seen showing foundations of concrete with the top surface of paving brick, and the methods of laying the pavements were admirably displayed for the benefit of those who are studying the subject.

The show was held under the auspices of the International Brick & Clay Products Exposition Co., of which the officers are: R. C. Penfield, president; William Schlake, treasurer; F. L. Hopley, secretary; W. S. Dickey, T. A. Randall, A. T. Leach, vice-presidents; G. H. Tefft, R. M. Coombs, W. P. Blair, L. R. Blackmer, directors.

The Exposition company was organized about a year ago for the purpose of exploiting brick as a construction material. The manufacturers were spurred on by the success with which the cement manufacturers had met in their several shows, and it was felt that something should be done by the clay men. And that they have succeeded was shown in this magnificent exposition which resulted from their efforts. A notable feature about the show was, no machinery was shown, and the only things in evidence were the manufactured clay products.

List of Exhibitors.

Brick and Clay Record, Chicago; Clay Products Co., Chicago; Clay Worker, Chicago; E. Dueschek & Son, Chicago; Wm. E. Dee Clay Mfg. Co., Chicago; American Terra Cotta & Ceramic Co., Chicago; The American Architect, New York City; The American Fabric Belting Co., Cleveland; Edgar Allen American Manganese Steel Co., Chicago; Hartford Faience Co., Chicago; Main Belting Co., Chicago; Mason City Brick & Tile Co., Mason City, Ia.; National Brick Manufacturers; Radford Publications, Chicago; Meacham & Wright Co., Chicago; Western Brick Co., Danville, Ill.; Woodland Clay Co.; Ludowici-Celadon Co., Chicago; Roessler & Hasslacher Chemical Co., Chicago; American Sewer Pipe Co., Akron, Ohio; Chicago Face Brick Association, R. M. Coombs, secretary; Thos. Moulding & Co., Chamber of Commerce Building, Chicago; The Purington Paving Brick Co., Galesburg, Ill.; LaSalle Pressed Brick Co., LaSalle, Ill.; Twin City Brick Co., St. Paul, Minn.; Clarence E. Poston, Attica, Ind.; Hocking Valley Products Co., Columbus, Ohio; Ohio Galvanizing & Manufacturing Co., Niles, Ohio; Davenport Brick & Tile Co., Davenport, Ia.; Hocking Valley Fire Clay Co., Nelsonville, Ohio; Kittanning Clay Products Co., Bradford, Pa.; Tuna Valley Pressed Brick Co., Bradford, Pa.; Pearl City Products Co., Bradford, Pa.; Upper Kittanning Brick Co., Bradford, Pa.; Chicago Fire Brick Co., Chicago; Imperial Belting Co., Chicago; Brown Instrument Co., Philadelphia, Pa.; Blackmer & Post Pipe Co., St. Louis, Mo.; Northwestern Terra Cotta Co., Chicago; Plymouth Clay Products, Fort Dodge, Ia.; Iowa Pipe & Tile Co., Des Moines, Ia.; Fisk & Co., New York City; Rush Bros., Chicago; McLaughlin Building Material Co., Chicago; A. S. Rosing, Chicago; National Fire Proofing Co., Chicago; National Paving Brick Manufacturers' Association, Cleveland, Ohio; Clay Products Publicity Bureau, G. H. Teft, secretary, Kansas City, Mo.; W. S. Dickey Clay Manufacturing Co., Kansas City, Mo.; Jean Boettner, Chicago; The Brick Builder, Boston, Mass.; Engineering Record, New York City; Humphrey Co., Kalamazoo, Mich.; Everhard Co., Massillon, Ohio; P. Bannon Sewer Pipe Co., Louisville, Ky.; Buckeye and Summit S. P. Co., Akron, Ohio; Cannetton S. P. Co., Cannetton, Ind.; The Ricketson Mineral Paint Co., Milwaukee, Wis.; Better Roads, Columbus, Ohio; American Saw Mill Machinery Co., Hackettstown, N. J.; Pierce Arrow Truck, 2420 Michigan avenue, Chicago; The Conneaut Shovel Co., Conneaut, Ohio; Denver S. P. Co., Denver, Colo.; Evans & Howard F. B. Co., St. Louis, Mo.; Great Eastern Clay Company, New York City; Iowa Pipe & Tile Co., Des Moines, Ia.; Laclede-Christi C. P. Co., St. Louis, Mo.; Lehigh S. P. & Tile Co., Fort Dodge, Ia.; Macomb Sewer Pipe Co., Macomb, Ill.; Monmouth Mining & Manufacturing Co., Monmouth, Ill.; Northwestern Clay Manufacturing Co., New Windsor, Ill.; Ontario Sewer Pipe Co., Nimico, Ont.; Pomona Terra Cotta Co., Pomona, N. C.; Post Pipe Co., Texarkana, Ark.; Red Wing S. P. Co., Red Wing, Minn.; Robinson Clay Products Co., Akron, Ohio; San Antonio Sewer Pipe Co., San Antonio, Tex.; St. Mary's S. P. Co., St. Marys, Pa.; Southern S. P. Co., Birmingham, Ala.; Standard Drain Pipe Co., St. Johns, P. O.; H. Stevens Sons Co., Macon, Ga.; Stoneware Pipe Co., East Alton, Ill.; Utah Fire Clay Co., Salt Lake City; Denny-Renton Clay & Coal Co., Seattle, Wash.; Pacific S. P. Co., Los Angeles, Cal.; Gladding-McBean S. P. Co., San Francisco, Cal.; Pacific Clay Products Publishing Bureau, San Francisco, Cal.; Bach Brick Co., Chicago; Builders' Brick Co., Chicago; Calumet Brick Co., Chicago; Carey Brick Co., Chicago; Chicago Brick Co., Chicago; Cutts-Manteno Brick Co., Chicago; Illinois Brick Co., Chicago; Helmann Brick Co., Chicago; Lake View Brick Co., Chicago; Lutter Brick Co., Chicago; National Brick Co., Chicago; Allis Brick Co., Chicago; Alliance Brick Co., Chicago; Ohio; Bradford Pressed Brick Co., Bradford, Pa.; Brazil Clay Co., Brazil, Ind.; Claycraft Brick Co., Columbus, Ohio; Columbus Brick & Terra Cotta Co., Columbus, Ohio; Harbison-Walker Refactories Co., Pittsburgh, Pa.; Iron-clay Brick Co., Columbus, Ohio; McArthur Brick Co., McArthur, Ohio; Andrew Ramsay Co., Mount Savage, Md.; Spahr Pressed Brick Co., Maysville, Ky.; Acme Brick Co., Cayuga, Ind.; Abingdon Paving Brick & Tile Co., Abingdon, Ill.; Canton Pressed Brick Co., Canton, Ohio; Fallston Fire Clay Co., Fallston, Pa.; Jewettville Pressed Brick Co., Buffalo, N. Y.; Kushequa Brick Co., Kushequa, Pa.; Martinsville Brick Co., Martinsville, Ind.; Osnaburg Brick Co., Canton, Ohio; Ohio Mining & Manufacturing Co., Shawnee, Ohio; Puritan Brick Co., Detroit, Mich.; Parry Brick Co., Boston, Mass.; Straitville Impervious Brick Co., New Straitsville, Ohio; National Roofing Tile Co., Lima, Ohio; Dahlstrom Metallic Door Co., 439 Monadnock Block, Chicago; Engineering-Contracting, 608 South Dearborn, Chicago; Good Roads, 150 Nassau street, New York; Ingram-Richardson Manufacturing Co., Bradford, Pa.; Iowa Silo Exhibit; South Zanesville S. P. & Brick Co., Zanesville, Ohio; Sayre & Fisher Co., Sayreville, N. J.; Tiffany Enamelled Brick Co., Momence, Ill.; Toronto Fire Clay Co., Toronto, Ohio; The Kansas Buff Brick & Manufacturing Co., Buffalo, Kan.; The Black Fork Co., Blackfork, Ohio; Darlington Brick & Mfg. Co., Darlington, Pa.—office, Pittsburgh; National Pressed Brick Co., St. Louis, Mo.; Adams Brick Co., Indianapolis, Ind.; The Federal Clay Products Co., Mineral City, Ohio; Sheldon Brick & Building Supply Co., Urbana, Ill.; Crawfordsville Shale Brick Co., Crawfordsville, Ind.; The Coshocton Brick Co., Coshocton, Ohio; Kittanning Clay Manufacturing Co., Kittanning, Pa.; Auburn Shale Brick Co., Auburn, Pa.; Metropolitan Brick Co., Canton, Ohio; Big Four Clay Co., Canton, Ohio; Harris Brick Co., Cincinnati, Ohio; Copeland-Ingalls Shale Brick Co., Birmingham, Ala.; Newburg Brick & Clay Co., Cleveland, Ohio; Thomas Moulding Co., Chicago, Ill.; Sterling Brick Co., Olean, N. Y.; Sykesville Brick Co., Sykesville, Pa.; Winsor Brick Co., Akron, Ohio; Hankinson & Hagler, Augusta, Ga.; Terre Haute Vitrified Brick Co., Terre Haute, Ind.; Alliance Clay Products Co., Alliance, Ohio; Clinton Paving Brick Co., Clinton, Ohio; Murphysboro Paving Brick Co., East St. Louis, Ill.; West Port Paving Brick Co., Baltimore, Md.; Nelsonville Brick Co., Nelsonville, Ohio; Denny-Renton Clay & Coal Co., Seattle, Wash.; Danville Brick Co., Danville, Ill.; Streator Paving Brick Co., Streator, Ill.; Albion Vitrified Brick Co., Albion, Ill.; Cleveland Brick & Clay Co., Cleveland, Ohio; Keystone Clay Products Co., Greensburg, Pa.; Athens Brick Co., Athens, Ohio; Deckman-Duty Brick Co., Cleveland, Ohio; C. P. Mayer Brick Co., Bridgeville, Pa.; Glen-Gary Brick & Cement Co., Reading, Pa.; Wooster Shale Brick Co., Wooster, Ohio; C. H. Doan, Columbus, Ohio; South Zanesville Sewer Pipe & Brick Co., Zanesville, Ohio; Corry Brick & Tile Co., Corry, Pa.; Alton Brick Co., Alton, Ill.; Marlon Brick Works, Montezuma, Ind.; A. F. Smith Co., New Brighton, Pa.; Wabash Clay Co., Veedersburg, Va.; Thornton Fire

Brick Co., Clarksburg, Va.; Cleveland Vitrified Brick Co., Oklahoma City, Okla.; Brick, Terra Cotta & Tile Co., Corning, N. Y.; Bloomfield Brick Co., Bloomfield, Ind.; Wassall Shale Brick Co., Gloucester, Ohio; Medora Shale Brick Co., Medora, Ind.; Los Angeles Pressed Brick Co., Los Angeles, Cal.; Indiana Paving Brick & Block Co., Indianapolis, Ind.; Bessemer Lime Stone Co., Youngstown, Ohio; Peebles Paving Brick Co., Portsmouth, Ohio; United Brick Co., Greensburg, Pa.; T. B. Townsend's Brick & Construction Co., Zanesville, Ohio; Barr Clay Co., Streator, Ill.; Kentucky Vitrified Brick Co., Louisville, Ky.; Trimble Brick Manufacturing Co., Trimble, Ohio; Kushequa Brick Co., Kushequa, Pa.; Johnsonburg Brick Co., Johnsonburg, Pa.; Portsmouth Granite Brick Co., Firebrick, Ky.; Poston Paving Brick Co., Crawfordsville, Ind.; Saginaw Paving Brick Co., Saginaw, Mich.; Springfield Paving Brick Co., Springfield, Ill.; Hammond Fire Brick Co., Fairmont, W. Va.; M. Anderson Brick Co., Minneapolis, Minn.; Minneapolis Brick & Tile Co., Minneapolis, Minn.; Tiffany Enamelled Brick Co., 1203 Chamber of Commerce Bldg., Chicago; Hydraulic Pressed Brick Co., 301 Chamber of Commerce Bldg., Chicago; Milwaukee Building Supply Co., Milwaukee, Wis.; The Woodland Clay Co., Woodland, Ill.; Dickinson Brick Co., Dickinson, N. D.; Alsey Brick & Tile Co., Alsey, Ill.; The Marbleoid Co., New York; Excelsior Press Brick Co., St. Louis, Mo.; St. Anthony Brick Co.; Cleveland Vitrified Brick Co., Cleveland, Ohio; Chicago Art Institute; The Lansing Pottery Co.; Hydraulic Press Brick Co., Minneapolis, Minn.; N. W. Fireproofing Co., Minneapolis, Minn.; S. G. Johnson & Co., Minneapolis, Minn.; Flour City Brick Co., Minneapolis, Minn.; J. M. Jagger Brick Co., Minneapolis, Minn.; Johnson, Jackson & Corning Co., Minneapolis, Minn.; Chaska Brick & Tile Co., St. Paul, Minn.; Enterprise Brick Co., Duluth, Minn.; Schroeder Brick & Lime Manufacturing Co., Shakopee, Minn.; Crookston Brick & Tile Co., Crookston, Minn.; Farnham Brick Co., Princeton, Minn.; Fertile Brick & Tile Co., Fertile, Minn.; M. C. Madsen, Hutchinson, Minn.; A. Coche Brick & Tile Co., Springfield, Minn.; Krefting & Haugen, Staples, Minn.; Red River Valley Brick Corp., Grand Forks, N. D.; Hebron Fire & Pressed Brick Co., Hebron, N. D.; Gold Bros. Brick Co., Big Stone City, S. D.; Excelsior Brick Co., Menomonie, Wis.; Warren B. Ferris Brick Co., Columbus, Ohio; Latrobe Brick Co., Latrobe, Pa.; Keystone Clay Products Co., Greensburg, Pa.; Melvin & Peterson, Bradford, Pa.; Alliance Clay Products Co., Alliance, Ohio; Marion Brick Works, Montezuma, Ind.; Ohio Fire Proofing Co., Nelsonville, Ohio; Better Roads, Columbus, Ohio; Ricketson Mineral Paint Works, Milwaukee, Wis.; Good Roads, New York, N. Y.; Dahlstrom Metallic Door Co., Jamestown, N. Y.; National Roofing Tile Co., Lima, Ohio; American Saw Mill Machinery Co., Hackettstown, N. J.; H. Paulman & Co., Chicago; Sayre & Fisher Co., New York and New Jersey Exhibit—A. Hanson; Empire Brick & Supply Co.; Matthew Gormlie; J. H. Gaulier & Co.; Dedier-March Co.; Bradford Pressed Brick Co., Bradford, Pa.; Municipal Engineering Co., Indianapolis, Ind.; Eureka Brick Co.; Chas. A. Bloomfield; Henry Mauer; Kreischer Brick Manufacturing Co.; U. A. Underhill Brick Co.; Hudson River Common Brick Manufacturing Co.; Empire Brick & Supply Co.; The Java Brick Works; Brigham Bros.; W. A. Underhill Brick Co.; U. F. Washburn; Philip Goldrich; William K. Hammond; Carey Brick Co.; Robert Lent; Charles A. McKenna; Green Point Fire Brick Co.; A. E. Aldridge; P. Goldin & Son; Alonso Rose & Co.; M. E. Mackey & Co.; Lynch Brothers; Thomas Shankey & Son; Malley & Co.; Frank De Noyle; D. Fowler, Jr., & Co.; Washburn & Fowler; Everett Fowler; Garner Brick Works; Staples Brick Works; Hendricks Brick Co.; Brockway Brick Co.; Brockway Brothers Co.; Arrow Brick Works; Lynch & O'Brien; Excelsior Brick Works; Allison & Wood; Terry Brothers; E. M. Renn; Rock Brick Co.; Brooklyn Fire Brick Works.

The National Drain Tile Company, of Terre Haute, Ind., was awarded contract for furnishing the tile for the new drainage system at Humboldt, Ill.

The Sheboygan Brick & Tile Company, of Sheboygan, Wis., has dissolved. The company was owned almost entirely by Julius Froelich. He has personally taken over the property of the concern.

The Bissell Brick Company, of South River, N. J., has been incorporated with a capital stock of \$100,000. The incorporators are E. Whitehead, R. F. Fountain, of South River, and J. Allgair, of Sayreville, N. J.

The Rose Paving Company, of Trenton, N. J., has been incorporated with a capital stock of \$100,000. The incorporators are A. A. Rose, J. C. Tattersall and H. A. Smith, all of Trenton, N. J. To carry on the paving of streets, building of bridges and viaducts.

The Glass Brick Company has decided to enlarge the capacity of its plant at Connellsburg, Pa., and for that purpose is arranging to sell \$100,000 worth of its seven per cent preferred stock. Raymond W. Green, of Uniontown, was elected secretary and treasurer recently.

The Sharon Clay Product Company, of Brookfield township, Trumbull county, Ohio, has been incorporated with a capital stock of \$30,000 to deal in building materials. The incorporators are W. C. Taylor, Charles A. Lytle, A. W. Krouse, Bess T. Krouse and Frank S. Thompson.

The American Clay Products Company, of Newark, N. J., has been incorporated with a capital stock of \$1,000,000 to manufacture fire proofing materials, clay products, etc. The incorporators are H. E. Lineaweaver, of Pittsburgh, Pa., G. M. Keasbey and J. DeGraw, of Newark, N. J.

MARCH 22, 1912

ROCK PRODUCTS

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PLASTER

The State Geologist of Oklahoma estimates that there are 125,800,000,000 tons of gypsum in the western part of the state. There are ten or twelve gypsum mills now at work on this material, the bulk of the product being shipped to Kansas city and Memphis.

A change has been made in the sales department of the Plymouth Gypsum Company at Fort Dodge. D. E. Roberts, sales manager for several years, has resigned his position as sales manager and has accepted a position with the Manitoba Gypsum Company as general manager. H. J. Osterlund, of Red Wing, Minn., who has been with this firm for many years, has been promoted and will act as sales manager for the Plymouth Gypsum Company. Mr. Roberts is spending a two months' vacation touring in Europe, and upon his return, which will be about May first, will take charge of the business at Winipeg, Canada.

The Delac Gypsum Products Company, of Wheatland, N. Y., has been incorporated to manufacture plaster board, etc. Capital stock, \$500,000.00. The incorporators are DeLancey Cameron, Genesee, N. Y., and H. F. Remington and H. R. Howard, of Rochester, N. Y.

SOUND CEILINGS.

No lath and plaster ceilings can be made sound and free from cracks unless the joists are well seasoned, firmly fixed and sufficiently strong to carry the overhead weight, as well as sustain the weight of the lath and plaster and resist jarring. Ceiling joists should never be more than 12 inches from center to center. Good lath, with break joints every foot and well nailed, is also imperative. If the above dimensions are exceeded the laths are liable to give or twist, on account of the weakness of the laths, or the weight of the plaster, or both combined. Where the ceiling joists are spaced wider than 12 inches, and a good job is desired, the ceiling should be strapped across the joists, which is done by fillets one and one-half to two inches wide by seven-eighths to one inch thick, and spaced to 12-inch centers. This strengthens and stiffens the joists, gives a free key for the plaster, and forms a sound, level ceiling. For lime mortar the lath should be keyed at least three-eighths of an inch, and for patent mortar no less than one-fourth inch.

CRACKED PLASTER WORK.

Cracks in plaster work are due to various causes. They may act individually or in combination. Cracks are often caused by settlement of the building. These cracks may be easily discerned by their breadth, depth and length. They also arise from the shrinkage of bad or unseasoned lumber used in the construction or framing of the building, which may cause displacement in the joists or lath. Other causes are the too sudden drying of the work; strong winds or heat; the laying of one coat of mortar on another coat before the first has sufficiently dried, or on walls that have a strong suction, which absorbs the moisture or "life" of the coat being laid, when it becomes short, or crumbly, scaly and apt to peel or fall off. In this last case it does not set, but only dries and shrinks, which gives rise to cracks, and eventually falls or crumbles away. The use of bad materials, insufficient use of lime and hair, or skimping of labor is often followed by cracks. Insufficient labor and unskilled workmanship in the application of the materials is a great source of trouble; but it will be understood that the best quality of labor will not make bad materials good and strong; and, on the other hand, the best materials will not compensate for bad labor. It is only by judicious selection of materials, and their skilled manipulation, that a high and enduring class of work can be obtained.

REPAIRING OLD PLASTER.

The repairing or patching of old plaster work is very often done in anything but a skillful manner. The joints are cut any old way, no attention is paid to the necessity of having it level and in conformity with the balance of the work, and the joints are overlapped, which should have been troweled down tight with the adjoining work.

When repairing or making additions to old plaster work care should be observed in cutting the

joints, so that the key of the existing work is not injured or broken. The joints one way should be cut on the studding or joists, and in a line with the lath the other way. A joint at the edge of a lath is stronger than at the center. If the lath work is weak the joints should be cut diagonally. Never use a hatchet to cut joints on lath work, for the repeated impacts will weaken and crack the old work. If the old plaster is hard it can be cut with a saw or the edge of an old trowel. Avoid acute angles in patches. Square, round or oval patches not only look better, but are much stronger than zigzag ones. When the old mortar has been removed and the edges put in shape the lath should be broomed to remove all dust; then dampen the lath work, but do not use water excessively, as it tends to warp the lath. For large patches it is best to give it a scratch coat and allow it to stand for a day at least. For small patches, the stronger and stiffer the gauge the less power the laths will have to warp. Joints should be troweled flush, and when the finish coat is sufficiently set should be finished with a semi-wet brush. Too much water on the work affects the lath, retards the drying of the patch and leaves your work streaky from the brush marks.

LOUISVILLE PLASTER NEWS.

Louisville, Ky., March 18.—Like the Bluegrass building world in general, the wall plaster trade of this territory has been "not dead but sleeping," during the past few weeks. Indubitable signs of life among the plasterers are evidencing themselves, however, and within thirty days the industry of manufacturing and setting interior surfaces will be going full blast. Local plaster plants are being over-hauled and set into operation, and as soon as a definite selling season arrives, summer demand will not find the trade unprepared in any sense of the word. Considerable improvement in local properties has been effected during the winter, and all signs point toward a successful year.

"Business is reasonably good, even at present. The situation is largely quiet, but there is plenty of work in contemplation, and future developments should not afford the least cause for complaint. The mill has been running full time for several weeks since it started spring operations after the winter, and we are confident of a successful season," said officers of the Kentucky Wall Plaster Company.

William Selke, president of the Atlas Wall Plaster Company, stated that words were inadequate to describe the general "excreableness" of the wall plaster field late in February and early in March. However, the middle week of the first spring month denoted improvement in business which promises to sustain for indefinite length, according to the Atlas executive. The Parkland plaster plant has been improved in preparation for good weather and the busy season. A large, new storage shed has been erected and further extensions are being planned by Mr. Selke.

William Selke, president of the Atlas Wall Plaster Company, of this city, recently returned from a trip to Florida, accompanied by Mrs. Selke. The southern clime, with the thermometer registering 80 in the shade during a time when blustery snows coated Louisville and Kentucky, offered decided advantages, according to the West End plaster man.

The season is termed to be just opening with the Southern Wall Plaster Company, of Louisville. Past performances of the company have not shown any unusual developments in the way of 1912 business, but ample contracts are promised for the immediate future. The Southern plant has been running to schedule time for several weeks, and is well stocked to handle budding demand.

G. J. Daily, Jr., formerly vice-president of the Southern Wall Plaster Company, has resigned his position and has severed his connection with the company. His successor has not yet been elected, and the concern is now under the direction of E. Joseph Kollros, who has been president for some time. Mr. Daily will engage in business for himself in Louisville.

SAN FRANCISCO PLASTER NEWS.

San Francisco, March 15.—The Mound House Plaster Company was unable to begin operations at its new Emeryville plant last month, as expected, but is now shipping down the raw material from Mound House, Nev., and will start up this week. The company will make no announcement regarding its selling arrangements until it has accumulated a good supply of its wall boards and plaster.

The Acme Cement Plaster Company is just starting the installation of a large plant at Gypsum, Wash., and is taking figures this week on structural steel for the building.

THE BARNES SAND & GRAVEL CO.
(Continued from Page 3.)

of power. Our engine was furnished and installed by the De La Vergne Machinery Company, of New York, who build an excellent engine.

"We have arranged with Mr. Dull to install a crusher in our plant, which is about the only addition we will make for the coming season.

"We wish to extend an invitation to the members of the association to visit our plant, and we wish to take this opportunity to thank those who extended the many courtesies last winter to our representatives while visiting their plants."

The officers of the Barnes Sand & Gravel Company are: Henry W. Heer, president; A. H. Bannon, vice-president; J. R. Gilliland, secretary and treasurer, and C. M. Ault, superintendent.

The Portage Silica Company, Youngstown, Ohio, has increased its capital stock from \$175,000 to \$200,000.

A. F. Kingsbury has leased sand and gravel fields at Cedar Falls, Iowa, and will do a wholesale and retail business.

The Erie Silicon Products Company has been chartered at Erie, Pa., and will engage in the sand business in that city.

The Beaumont Shell & Sand Company, Beaumont, Texas, has been incorporated with a capital stock of \$10,000. Incorporators: M. W. Smith, Hal Irby Greer and Gus W. Price.

The Ridgeway Mica Company, Pittsburgh, Pa., has been incorporated with a capital stock of \$25,000. Incorporators: Nicholas Hartman, Frederick H. Heck and Andrew Pafenbach, all of Pittsburgh.

The Missoula Crushed Rock & Gravel Company, Missoula, Mont., has been incorporated with a capital stock of \$15,000. Incorporators: Elmer B. Hershey, J. P. Woodbury and J. M. Keith, all of Missoula.

Montezuma Sand, Gravel & Timber Company, Springfield, Ill., has been incorporated with a capital stock of \$10,000, to deal in building materials. A. F. Hemphill, M. K. Hemphill and E. I. Rice are the incorporators.

The Mercantile Sand & Gravel Company, of Memphis, Tenn., has been incorporated with a capital stock of \$50,000. The incorporators are O. K. Robertson, H. W. Brennan, V. E. Schevenell, H. H. Miller and E. L. Doyle.

The Union Sand and Gravel Company, of Cincinnati, Ohio, has been incorporated with a capital stock of \$25,000. The incorporators are William Kalbfell, Alfred Kalbfell, G. P. Walker, R. H. Walker and Louis Drach.

Iowa Sand & Gravel Company, Augusta, Ia., has been incorporated with a capital stock of \$200,000, to own and sell gravel lands, build and operate sand and gravel plants. President, R. S. Buzzell; treasurer, L. J. Coleman, Augusta.

The Citizens' Sand and Gravel Company, of Toledo, Ohio, has been incorporated with a capital stock of \$15,000 to deal in sand and gravel and manufacturing of plaster. The incorporators are Gabe Cooper, Clarence La Bean, Ernest P. Miller, Edward S. Gray and Joseph W. Lane.

The Mississippi Sand Company, of Alton, Ill., is ready for work with the steamer City of Moline and awaits the going out of the ice. The Moline Sand Company, of Moline, Ill., is another Mississippi river firm that was delayed. Work in 1911 began on March 6. Ice-cutting was going on the same time this year.

The E. T. Durden Sand Co., of Saulsbury, Tenn., have recently acquired 200 additional acres of good sand land on which they will install the latest improvements for handling various grades of sand. L. W. Elliott, the general manager, is very sanguine over the outlook for business in this territory for the coming season and is increasing his output to take care of the additional business already in sight.

MEMPHIS GRAVEL NOTES.

Memphis, Tenn., March 21.—The Leaf River Gravel Co., of Hattiesburg, Miss., is preparing to more than double its capacity. The company is building another large barge and have ordered a new engine and boiler, with pumping outfit, sand bins, etc. About ten cars a day will be loaded.

Overton county, Tennessee, has voted \$150,000 of bonds for free turnpikes.

C. C. Hanson, of Memphis, chairman of the Memphis to Bristol Highway Association for west Tennessee, reports very satisfactory progress with the work. When the weather opens up the matter will be pushed faster. Harrison and Epps, of Memphis, are the engineers who have been placed in charge of the work, due to the death of E. H. Thompson. It is expected that the entire highway will be finished by January 1, 1913.

The very great agitation on the matter of road construction attracting attention everywhere has been no less felt in Tennessee, and there definite progress has been made on the Tennessee State Highway from Memphis to Bristol. It will doubtless be completed within twelve months.

Ante this work and road work in other parts of the Union, aside from geological interest, the chert and gravel beds of Tennessee are attracting some attention. ROCK PRODUCTS in this issue is able to show several good views. Geo. H. Ashley, former State Geologist, who has just gone with the National Government, has done a useful work in studying out the properties. The Tennessee correspondence of this paper for several years has made reference to Camden chert. While the deposits are somewhat limited in that district, there are several gravel pits being worked in Tennessee now. The pit of the West Tennessee Gravel Co., a Memphis institution, is shown in this issue. Their screening plant is also shown. Another view represents the pit of the Memphis Stone and Gravel Co. This company was started in 1907. The West Tennessee company was started in April, 1910. The Memphis Company's pit has a cut of about 60 feet; the West Tennessee company's of about 40 feet. In working weather the two plants at Camden, Tenn., are furnishing from 40 to 60 cars of rock a day.

It is reported that a third plant may start at Camden. The chert is dug with a steam shovel after being broken up with powder. One charge of powder will yield from 50 to 60 carloads. It is excavated and then screened in much the same way as bituminous coal is sized. Deposits are found in Decatur county, Tenn., and the field seems to extend into western Kentucky and southern Illinois. In the latter State it is known as Clear Creek chert. The novaculite is a fine grained compact quartz rock or gravel, less mixed with the clay than chert; the latter used for bedding and the former for hard body of road. Many counties in west Tennessee have used the same.

A new company organized by H. W. Brennan and associates will engage in the sand and gravel business in Memphis within the next sixty days. Mr. Brennan did notable work as one of the State Commission appointed by Gov. Patterson near the close of his administration, in making estimates and reports on the State Highway and public road building in Tennessee, and is quite intimately associated with engineering and road development work. This new company which he launches will be known as the Mercantile Sand and Material Company and will have a capital stock of \$50,000. The incorporators are H. W. Brennan, O. K. Robertson, E. L. Boyle, V. E. Schevenel and H. H. Miller. The company has made arrangements to use the incline of the West Kentucky Coal Co. at the foot of Butler avenue, where a tract of land large enough for storage purposes has been secured. A large dredge boat and a fleet of barges will be built at once, the plan being to use river sand and gravel.

The Montezuma Sand, Gravel & Timber Company, Springfield, Ill., has been incorporated; capital \$10,000. Dealing in building materials. Incorporators—A. F. Hemphill, N. K. Hemphill, E. I. Rice.

V. O. Johnston, formerly general manager of the Lincoln Sand & Gravel Company, Lincoln, Ill., is building a new gravel washing plant at Sabula, Iowa. He has placed orders with Raymond W. Dull & Company, of Aurora, Ill., for screening machinery.

C. E. Hoffman, of Sheridan, Ind., is going to install washing and screening machinery in a sand and gravel plant. The present capacity is 300 cubic yards per day. Mr. Hoffman is on the lookout for a good location for a sand and gravel plant.

Pittman & Barrett, sand and gravel dealers at Sterling, Ill., are installing machinery for loading and building storage bins.



PIT OF THE MEMPHIS SAND & GRAVEL CO.



QUARRYING IN CAMDEN CHERT NEAR CAMDEN.
PIT OF THE WEST TENNESSEE GRAVEL CO.



SCREENING TIPPLE OF THE WEST TENNESSEE GRAVEL CO.

Acme Brick & Sand Company, Milwaukee, Wis., has been incorporated with a capital stock of \$20,000. The incorporators are P. G. Toepfer, I. G. Toepfer and Charles J. Pokorny.

MODEL PLANT.

Something About the Kickapoo Sand and Gravel Company's Equipment.

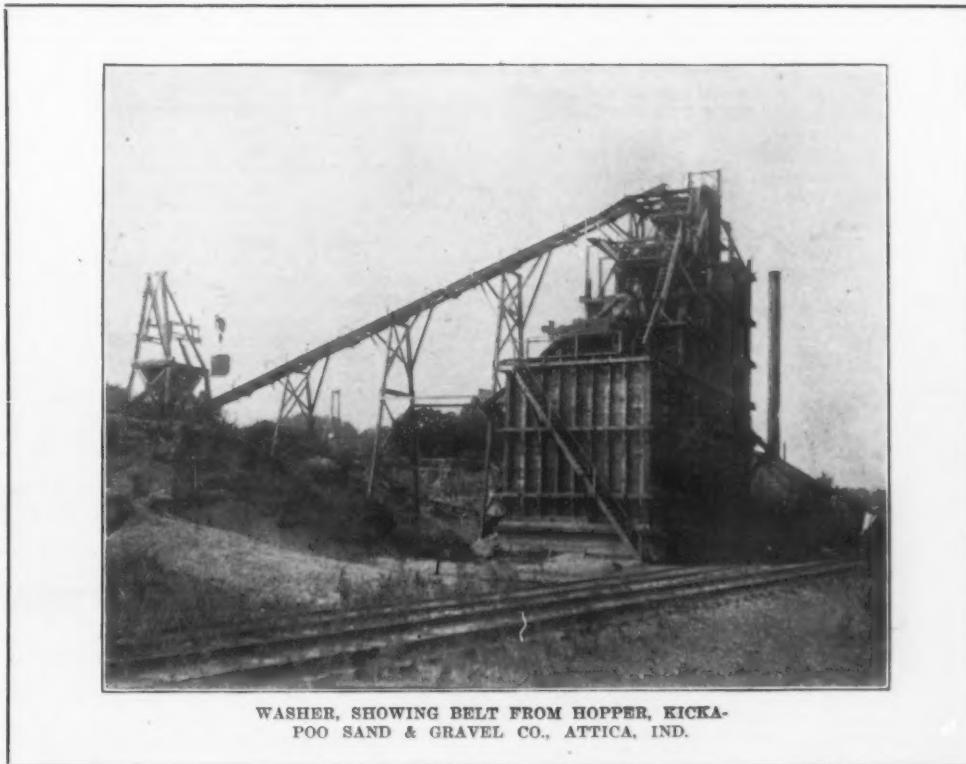
The average sand and gravel producer is alive to the most modern and up-to-date equipment for his plant. A model plant is that of the Kickapoo Sand & Gravel Co., of Attica, Ind., of which P. A. Stewart is president and C. C. Fisbeck is vice-president.

The plant is located on the Chicago & Eastern Illinois railroad, four miles north of Attica, and derives its name from the creek that passes near it from the famous Kickapoo Falls and the railroad station which are only a short distance away.

Plans for the plant were furnished by the Stephens-Adamson Manufacturing Co., of Aurora, Ill., from the company's own designs of buildings and arrangement. The large building shown in this connection is the washer and sorter to which all the gravel and sand is taken. From huge cables over the pit, which by the way were furnished by the Reinert Cable Co., and operated by a 50-horsepower Lidgewood hoisting engine, hangs a shovel that will hold $2\frac{1}{4}$ tons and, after the shovel is filled, it is sent along the cables to a big hopper, where it is automatically dumped. The belt conveyor here was furnished by the Stephens-Adamson Manufacturing Co., and is 24 inches wide on 120-foot centers. The Rexall double stitched canvas belt was furnished by the Imperial Belting Co. last year. The material is carried on the conveyors to a hopper at the top of the building, where it meets a large flow of water from a well near the engine house. The water supply is obtained from an 8-inch drive well 10 feet in diameter and 33 feet deep. Two Dean Bros.' durable duplex steam pumps, located at the water level, furnish about 1,200 gallons per minute. The material is washed and sorted by gravity, first flowing into a revolving screen from which the larger stone is spouted to a No. 4 Austin gyratory crusher, and after passing through it, it is elevated again to the top hopper, thence into other revolving screens of the Gilbert variety that drop the various sizes of gravel into their respective bins ready for loading on the cars. The sand passes into settling boxes which automatically wash and clean it and dump it into bins, the dirt in water passing into a waste spout which carries it away from the plant.

The engine house is of brick and steel and contains two 80-horsepower boilers and one Erie automatic 120-horsepower engine, which does the work of crushing and running the washer. A secondary engine, in an adjacent building, operates the cable shovel.

Five sizes of material are furnished by the Kickapoo Sand and Gravel Co.: No. 8 or $1\frac{1}{4}$ -inch crushed gravel for roofing; No. 5 or $\frac{1}{2}$ washed gravel for roofing; No. 2 or washed torpedo sand



WASHER, SHOWING BELT FROM HOPPER, KICKAPOO SAND & GRAVEL CO., ATTICA, IND.

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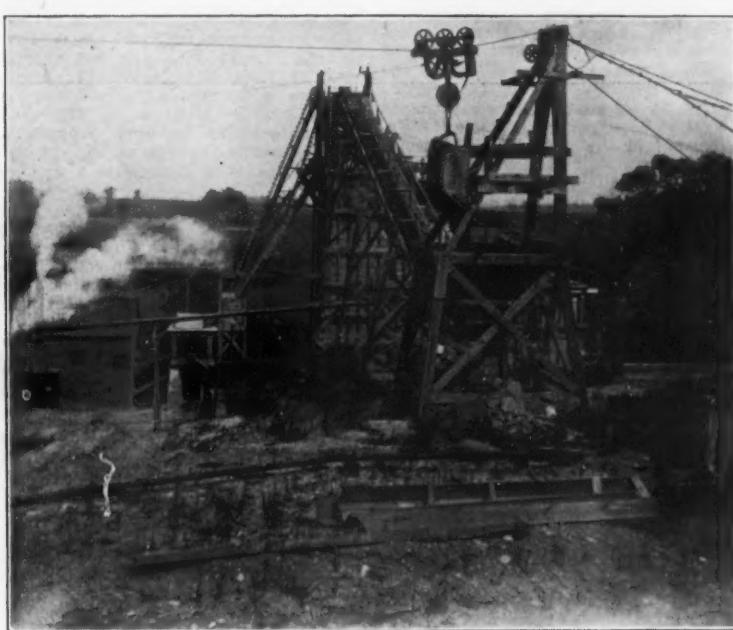
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SHOVEL DUMPING GRAVEL IN HOPPER, KICKAPOO SAND & GRAVEL CO., ATTICA, IND.

MEMPHIS GRAVEL NOTES.

Memphis, Tenn., March 21.—The Leaf River Gravel Co., of Hattiesburg, Miss., is preparing to more than double its capacity. The company is building another large barge and have ordered a new engine and boiler, with pumping outfit, sand bins, etc. About ten cars a day will be loaded.

Overton county, Tennessee, has voted \$150,000 of bonds for free turnpikes.

C. C. Hanson, of Memphis, chairman of the Memphis to Bristol Highway Association for west Tennessee, reports very satisfactory progress with the work. When the weather opens up the matter will be pushed faster. Harrison and Epps, of Memphis, are the engineers who have been placed in charge of the work, due to the death of E. H. Thompson. It is expected that the entire highway will be finished by January 1, 1913.

The very great agitation on the matter of road construction attracting attention everywhere has been no less felt in Tennessee, and there definite progress has been made on the Tennessee State Highway from Memphis to Bristol. It will doubtless be completed within twelve months.

Amid this work and road work in other parts of the Union, aside from geological interest, the chert and gravel beds of Tennessee are attracting some attention. ROCK PRODUCTS in this issue is able to show several good views. Geo. H. Ashley, former State Geologist, who has just gone with the National Government, has done a useful work in studying out the properties. The Tennessee correspondence of this paper for several years has made reference to Camden chert. While the deposits are somewhat limited in that district, there are several gravel pits being worked in Tennessee now. The pit of the West Tennessee Gravel Co., a Memphis institution, is shown in this issue. Their screening plant is also shown. Another view represents the pit of the Memphis Stone and Gravel Co. This company was started in 1907. The West Tennessee company was started in April, 1910. The Memphis Company's pit has a cut of about 60 feet; the West Tennessee company's of about 40 feet. In working weather the two plants at Camden, Tenn., are furnishing from 40 to 60 cars of rock a day.

It is reported that a third plant may start at Camden. The chert is dug with a steam shovel after being broken up with powder. One charge of powder will yield from 50 to 60 carloads. It is excavated and then screened in much the same way as bituminous coal is sized. Deposits are found in Decatur county, Tenn., and the field seems to extend into western Kentucky and southern Illinois. In the latter State it is known as Clear Creek chert. The novaculite is a fine grained compact quartz rock or gravel, less mixed with the clay than chert; the latter used for bedding and the former for hard body of road. Many counties in west Tennessee have used the same.

A new company organized by H. W. Brennan and associates will engage in the sand and gravel business in Memphis within the next sixty days. Mr. Brennan did notable work as one of the State Commission appointed by Gov. Patterson near the close of his administration, in making estimates and reports on the State Highway and public road building in Tennessee, and is quite intimately associated with engineering and road development work. This new company which he launches will be known as the Mercantile Sand and Material Company and will have a capital stock of \$50,000. The incorporators are H. W. Brennan, O. K. Robertson, E. L. Boyle, V. E. Schevenel and H. H. Miller. The company has made arrangements to use the incline of the West Kentucky Coal Co. at the foot of Butler avenue, where a tract of land large enough for storage purposes has been secured. A large dredge boat and a fleet of barges will be built at once, the plan being to use river sand and gravel.

The Montezuma Sand, Gravel & Timber Company, Springfield, Ill., has been incorporated; capital \$10,000. Dealing in building materials. Incorporators—A. F. Hemphill, N. K. Hemphill, E. L. Rice.

V. O. Johnston, formerly general manager of the Lincoln Sand & Gravel Company, Lincoln, Ill., is building a new gravel washing plant at Sabula, Iowa. He has placed orders with Raymond W. Dull & Company, of Aurora, Ill., for screening machinery.

C. E. Hoffman, of Sheridan, Ind., is going to install washing and screening machinery in a sand and gravel plant. The present capacity is 300 cubic yards per day. Mr. Hoffman is on the lookout for a good location for a sand and gravel plant.

Pittman & Barrett, sand and gravel dealers at Sterling, Ill., are installing machinery for loading and building storage bins.



PIT OF THE MEMPHIS SAND & GRAVEL CO.



QUARRYING IN CAMDEN CHERT NEAR CAMDEN.
PIT OF THE WEST TENNESSEE GRAVEL CO.



SCREENING TIPPLE OF THE WEST TENNESSEE GRAVEL CO.

Acme Brick & Sand Company, Milwaukee, Wis., has been incorporated with a capital stock of \$20,000. The incorporators are P. G. Toepfer, I. G. Toepfer and Charles J. Pokorny.

MODEL PLANT.

Something About the Kickapoo Sand and Gravel Company's Equipment.

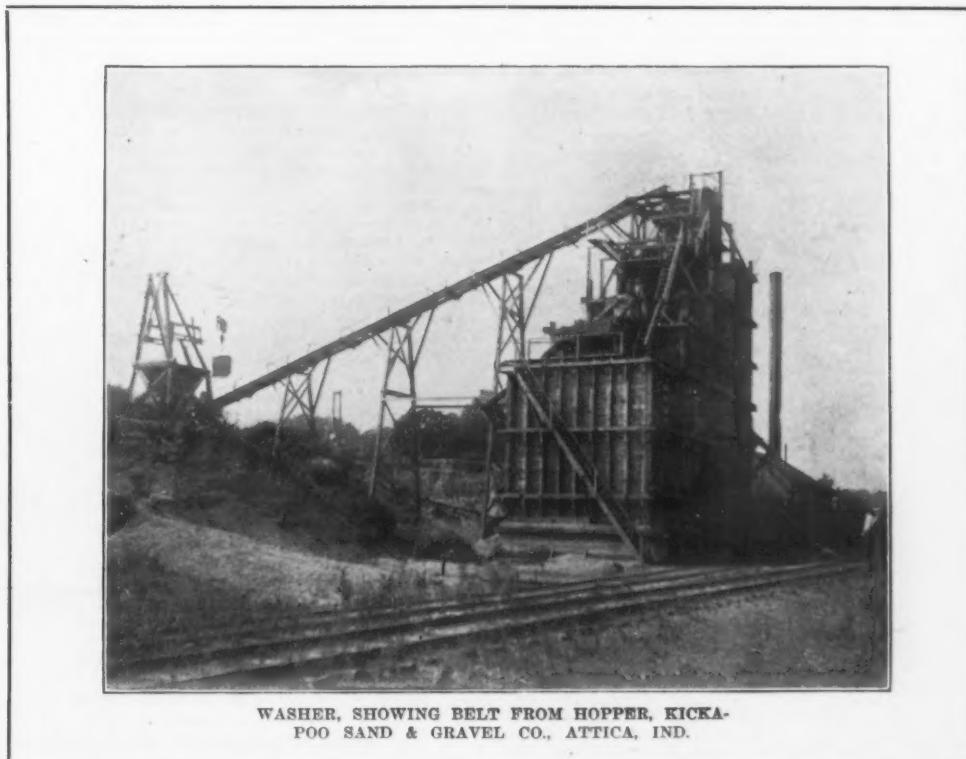
The average sand and gravel producer is alive to the most modern and up-to-date equipment for his plant. A model plant is that of the Kickapoo Sand & Gravel Co., of Attica, Ind., of which P. A. Stewart is president and C. C. Fisbeck is vice-president.

The plant is located on the Chicago & Eastern Illinois railroad, four miles north of Attica, and derives its name from the creek that passes near it from the famous Kickapoo Falls and the railroad station which are only a short distance away.

Plans for the plant were furnished by the Stephens-Adamson Manufacturing Co., of Aurora, Ill., from the company's own designs of buildings and arrangement. The large building shown in this connection is the washer and sorter to which all the gravel and sand is taken. From huge cables over the pit, which by the way were furnished by the Reinert Cable Co., and operated by a 50-horsepower Lidgerwood hoisting engine, hangs a shovel that will hold 2½ tons and, after the shovel is filled, it is sent along the cables to a big hopper, where it is automatically dumped. The belt conveyor here was furnished by the Stephens-Adamson Manufacturing Co., and is 24 inches wide on 120-foot centers. The Rexall double stitched canvas belt was furnished by the Imperial Belting Co. last year. The material is carried on the conveyors to a hopper at the top of the building, where it meets a large flow of water from a well near the engine house. The water supply is obtained from an 8-inch drive well 10 feet in diameter and 33 feet deep. Two Dean Bros.' durable duplex steam pumps, located at the water level, furnish about 1,200 gallons per minute. The material is washed and sorted by gravity, first flowing into a revolving screen from which the larger stone is spouted to a No. 4 Austin gyratory crusher, and after passing through it, it is elevated again to the top hopper, thence into other revolving screens of the Gilbert variety that drop the various sizes of gravel into their respective bins ready for loading on the cars. The sand passes into settling boxes which automatically wash and clean it and dump it into bins, the dirt in water passing into a waste spout which carries it away from the plant.

The engine house is of brick and steel and contains two 80-horsepower boilers and one Erie automatic 120-horsepower engine, which does the work of crushing and running the washer. A secondary engine, in an adjacent building, operates the cable shovel.

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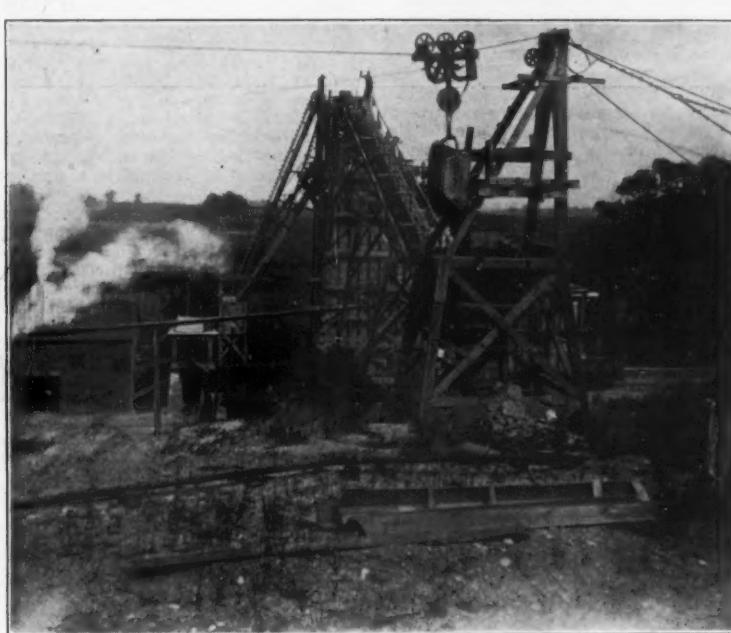
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SHOVEL DUMPING GRAVEL IN HOPPER, KICKAPOO SAND & GRAVEL CO., ATTICA, IND.

ROCK PRODUCTS

MARCH 22, 1912

The Rodgers Sand Company has been using the cold weather to get its entire equipment in splendid shape for spring work. Among the expenditures which it is making is a large one for two steel barges which are now being constructed by the Jones & Laughlin Steel Company for its use.

A recent very interesting installation of the Stephens-Adamson Mfg. Co., Aurora, Ill., is that of a sand and gravel washing plant for the Gulf Lumber Company, Fullerton, La., which is erecting a large reinforced concrete plant at that point. Upon commencement of the construction of the plant it was found that the gravel to be used for the concrete required washing. There being a large bank of good gravel in the immediate vicinity, the Stephens-Adamson company was telegraphed for plans and estimates on a gravel washing plant of 20 yards capacity. Their proposal was submitted at once by special delivery, and a telegram in reply advised them to ship the machinery by express. All the machinery was manufactured in the shop of the Stephens-Adamson Mfg. Co. and shipped within one week from the receipt of the telegram, and the plant was in operation eight days after the shipment was made. The equipment consists of the necessary conveyors, screens and settling tank to supply the material for the concrete, and the rapid execution of the order allowed the work on the plant to go forward with no delay whatever.

The Vigo Washed Sand & Gravel Company, of Terre Haute, Ind., is building a new sand and gravel washing plant to operate on the Wabash river. It has purchased pumping machinery from the Morris Machine Works and screening machinery from Raymond W. Dull & Company, of Aurora, Ill.

The dredge boat is 70 feet long, and after screening the gravel will be loaded directly onto the barges, of which there are six in number, two more to be added later.

The tramway is being manufactured by the Link-Belt Company, Chicago, and is 365 feet long, having a boom extending over the river about 50 feet, thus allowing two to three barges to be placed abreast.

The unloading will be done by a 1½ yard clam shell running from barge to storage ground. The daily capacity will be 1,000 yards of washed and screened sand and gravel a day.

W. H. Ford and W. H. Malott, of San Francisco, engaged in the gravel roofing business, who are installing a large gravel washing and screening plant near Niles, Cal., have incorporated as the Fibrestone & Roofing Company, with a capital stock of \$50,000.

The Spokane Sand Company has been incorporated at Spokane, Wash., with a capital of \$5,000, by L. Willett, W. N. Murphy and others.

W. F. Ribbens, of Sheboygan, Wis., has installed an electric motor to operate his new sand and gravel elevator.

NEW YORK SAND AND GRAVEL NEWS.

New York, N. Y., March 18.—Dealers report that they have received numerous inquiries for sand and gravel during the past month. Weather conditions have improved somewhat during the past week and operators are preparing for work to begin as soon as the ground is thawed out. Considerable work is contemplated in New York City and vicinity, such as the repaving and building of streets in the four boroughs. The subways will shortly be in position to use sand and gravel. This undertaking will alone consume enormous amounts of these materials. Sand and gravel men are very optimistic regarding the outlook for spring and summer business. Prices have been advanced since the first of the year and are firm. Sand is bringing 45 cents per cubic yard and gravel is quoted at 80 to 90 cents a cubic yard alongside.

The Board of Estimate authorized the issue of \$3,000,000 in corporate stock for preliminary repaving work in the various boroughs. Of this amount, Manhattan and Brooklyn were allotted \$1,000,000 each, the Bronx and Queens were given \$350,000 each and Richmond was allowed \$300,000.

A representative of the Crescent Sand & Gravel Company in speaking of conditions in the sand and gravel trade during the past month, said: "We have just passed through a slow period, but during the past two weeks, since the weather has moderated, we have received a large number of inquiries for our materials. The outlook at the present time never was better and we look for a good demand

for the spring business. We understand that contracts have been signed to deliver sand and gravel for the tri-borough subways. This work will alone require an enormous amount of sand and gravel. The price of sand has been advanced and is now quoted at 45 cents per cubic yard alongside. Gravel is bringing from 80 cents to 90 cents alongside. Contractors are now waiting for favorable weather to commence operations for foundations and other work."

Charles A. Fox, general manager of Phoenix Sand & Gravel Company, made the following remarks regarding the sand and gravel market: "We notice a general awakening of business during the past month, which would indicate that contractors are preparing for the building operations which are to commence as soon as the weather permits. There is plenty of building work contemplated in New York City and also a large amount of improvements to be made in public works, paving of streets and the laying of sewers, etc. The outlook for business during the next month or two is very bright indeed. Prices have been advanced of late, and dealers are now receiving a fair price which allows them a reasonable profit on their investment."

At the offices of the Goodwin Sand & Gravel Company it was reported that during the past month more activity was shown in the demand for sand and gravel. Numerous inquiries have been received from contractors who are anxious to begin work as soon as the frost leaves the ground. Indications point to a good early spring demand for sand and gravel, and the outlook is very bright for future business. Prices for sand and gravel have been advanced since the first of the year, and sand is now quoted at 45 cents per cubic yard alongside, and gravel 80 cents to 90 cents alongside.

LOUISVILLE CEMENT NEWS.

Louisville, Ky., March 18.—Cement mills through the Ohio valley have had a hard time of it during the past month on account of the weather, but relief in this regard is assured for the immediate future.

"There has been no change in prices during the past month, and there is no immediate prospect of such a move, but we are satisfied that the situation affecting the cement industry is materially improved," said Henry Gray, secretary of J. B. Speed for 1912, and considering the fat of the president & Company. "A fair volume of business is the prospect for 1912, and considering the fact of the presidential year, that is saying a good deal. The local building situation is proving to be a noticeably sustaining feature in our trade, for Louisville to date has registered practically as much building as she had posted this time last year, in a season which broke all records in the history of the city inspector's offices."

The local Speed headquarters, at Fourth avenue and Main street, are being improved through an extension of the business offices so as to cover practically the entire ground floor of the warehouse. The office extension will be neatly equipped and is provided with facilities for northern light.

"The situation is improved because of prospective increases in demand," said Charles Horner, secretary of the Kosmos Portland Cement Company, of this city. "Stiffened demand should better the market appreciably, especially with regard to prices and there is no reason for any serious complaint to be registered against the year as a whole." Extensive improvements in the mills of the Kosmos Portland Cement Company at Kosmosdale, Ky., a few miles south of Louisville, are in contemplation.

The wedding of Charles Horner, secretary of the Kosmos Portland Cement Company, to Miss Fannie Ballard, one of the most charming of Louisville girls, will be solemnized in the early summer in this city.

C. M. Timmons, of the Kosmos Portland Cement Company, recently returned from a short business trip to Cincinnati, O.

The Kosmos Portland Cement Company, of Louisville, has completed the shipment of 8,100 barrels of its product to Owensboro, Ky. The cement was used in the concrete construction of the new custom house in Owensboro, the water-softening works, the additions to the Glenmore distilling properties and for pavements and gutters. The Owensboro work furnished an interesting example of the consumer demand in smaller cities for cement.

The Superior Portland Cement Company has landed a comfortable order for 10,000 barrels of its product to be shipped to Ashland, Ky. The Superior material will be used in the concrete construction of the Ashland Leather Company's new tannery, the old one having been destroyed by fire a short time ago.

A. R. Baxter, formerly of Allison, Ia., has purchased a retail yard at Northwood, Ia.

FIFTEENTH ANNUAL MEETING.

The American Society for Testing Materials will hold their fifteenth annual meeting at New York City March 28 and 29, at the Hotel Astor. The program is as follows:

Program.

First session, Thursday, March 28, 10 a. m. Minutes of the Fourteenth Annual Meeting. Annual Report of the Executive Committee. Annual address by the president.

Report of Committee A-6: On the Magnetic Testing of Iron and Steel. C. W. Burrows, chairman.

Report of Committee A-10: On Hardness Tests. Bradley Stoughton, chairman.

Report of Committee E-5: On Rules Governing the Form but Not the Substance of Specifications. Edgar Marburg, chairman.

Report of Committee B-1: On Standard Specifications for Copper Wire. J. A. Capp, chairman.

Report of Committee B-2: On Non-Ferrous Metals and Alloys. William Campbell, chairman.

Electron of officers.

Miscellaneous business.

Second session, Thursday, March 28, 3 p. m.

On Steel and Wrought Iron.

Report of Committee A-2: On Standard Specifications for Wrought Iron. S. V. Hunnings, chairman.

Report of Committee A-1: On Standard Specifications for Steel. Wm. R. Webster, chairman.

Third session, Friday, March 29, 10 a. m.

On Steel.

Report (continued) of Committee A-1: On Standard Specifications for Steel. Wm. R. Webster, chairman.

Fourth session, Friday, March 29, 3 p. m.

Report of Committee C-1: On Standard Specifications for Cement. G. F. Swain, chairman.

Report of Committee D-6: On Standard Specifications for Coke. C. H. Zehnder, chairman.

Report of Committee C-4: On Standard Specifications and Tests for Clay and Cement Sewer Pipe. Rudolph Hering, chairman.

Report of Committee C-6: On Standard Tests and Specifications for Drain Tile. A. Marston, chairman.

Report of Committee D-3: On Standard Methods of Analysis of Fats and Oils. C. N. Forrest, chairman.

Report of Committee D-8: On Waterproofing Materials. W. A. Aiken, chairman.

Report of Committee E-3: On the Definition of the Term "Modulus of Elasticity" in Its Application to Materials, including Non-Ferrous Metallic Metals and Their Combinations. Leonard Waldo, chairman.

Miscellaneous business.

ATLANTIC AND GULF RESUMES.

After being closed down for two months in order to connect up the new machinery which will more than double the output of their mill, the Atlantic & Gulf Portland Cement Company, Ragland, Ala., resumed operation on February 1. The following installations have been made: No. 5 Gates crusher, addition of two 42-inch Fuller mills on raw material, one 42-inch Fuller mill on coal, a complete blowing and coal injecting system for the kilns, one 9'x125' Vulcan kiln, pan conveyor for conveying clinker from kilns to clinker storage, a clinker storage with capacity of 75,000 barrels, gypsum and clinker weighing system, three Sturtevant Ring-Roll mills with Newaygo Separators, three Allis-Chalmers tube mills with cyclones, and a complete readjustment of transmission and conveying machinery.

It is said by competent engineers that this plant is now one of the best constructed in the country and capable of producing an exceptionally high grade product at minimum cost. It is the intention of this company to further increase its daily production some time during the present year.

The Fourth Building Company, Cleveland, Ohio, has incorporated with a capital stock of \$30,000. R. H. Sweetland and others.

The Baldwin Construction Company, Los Angeles, Cal., has been incorporated with a capital stock of \$50,000; subscribed, \$33,000. Directors: Harry Goeghegan, Charles A. Baldwin, George L. Graham, Christ M. Hansen, H. J. Webb, J. M. Effenne, J. and J. B. Hughes.

F. Wible Curry, Louisville, Ky., incorporated with \$15,000 capital stock, to do construction work. Incorporators: F. Wible Curry, John J. Davis and Summers Davis.

John Quin & Son Co., Cambridge, Mass., has been incorporated, to deal in building materials. Capital stock, \$40,000. President and treasurer, T. J. Quin, Arlington, Mass.

MARCH 22, 1912

ROCK PRODUCTS

41

NEW SUPPLY COMPANY.

The incorporation at Albany, N. Y., of the Albany Builders' Supply Company has just been made public. The company has as its incorporators and officers Mr. Edward W. Legg of Albany, President; Mr. George D. Elwell of New York, Vice President; Mr. George H. Hagadorn of Albany, Secretary and Treasurer.

Mr. Ladd has for the last twenty years been actively interested in the builders' supply business in Albany and the East with John H. Jackson Company, and for the last few years has been the Treasurer and General Manager of that company. Mr. Ladd is one of the most popular and best known supply men in the East, and has the reputation with the trade as well as with the manufacturers of being unusually fair and business-like in all of his transactions.

Mr. Elwell has been in the sales department of the United States Gypsum Company since April, 1902, being at that time with one of the companies they purchased. For the last two years he has been the company's Assistant Sales Manager in their New York office. This ten years' experience in the plaster business combined with the natural association with the building interests generally should make him a splendid running mate for his present associates.

Mr. Elwell is in close touch with the manufacturers and their problems, and if enthusiasm, personality and ability have anything to do with it, he will make good in his new venture.

Mr. Hagadorn is an Albany man of well-recognized standing in the real estate business. He is a member of several clubs and other organizations and has a life-time acquaintance with Albany and its people. His business has brought him more or less into contact with the building trades and those interested in building operations, and there is no question but that he will add much strength to the company.

This concern will handle a complete line of builders' supplies, sewer pipe, tile and specialties, and the indications are that they will be large factors in the supply business.

Their warehouse is located on the main line of the D. & H. Railroad, in the heart of the city, and has also dock facilities on the Hudson River.

The Albany Builders' Supply Company started active operations on March 1st, and have been booking some nice orders.

The American Construction Company, Dayton, Ohio, has been incorporated with a capital stock of \$10,000. Incorporators: T. F. Hudson, A. M. Myers, L. C. Hatch, Z. N. Wright and T. J. McCormick.

O. L. Miller & Co., Indianapolis, Ind., has been incorporated with a capital stock of \$10,000, to deal in fuel, building material, etc. Directors: O. L. Miller, C. A. Helm and G. M. Miller.

Doty & Orr Company, Manhattan, N. Y., has been incorporated with a capital stock of \$25,000 to deal in building materials. Incorporators: H. A. Doty, Allendale, N. J.; W. G. Orr, and J. Finnerty, New York City.

Articles of incorporation were filed recently by the Bennett-Barnes Company, Terre Haute, Ind., with a capital stock of \$10,000, to deal in building materials. Directors: Charles and E. J. Bennett and G. L. Barnes.

The Denison Tile Engineering Company, Cleveland, Ohio, has been incorporated with a capital stock of \$10,000, to deal in building material. Incorporators: W. C. Denison, G. M. Cummings, Thomas H. Jones and W. L. David.

The Smyth Manufacturing Company, Meadowview, Va., has been incorporated with a capital stock of \$10,000, to deal in builders' supplies and machinery. R. L. Smyth, president; W. S. Smyth, vice-president, and D. C. Ritchie, secretary-treasurer.

The Victor Portland Cement Company, near Victorville, Cal., won a substantial victory over the Southern Pacific Company recently, when Frank Buren, register of the local land office, handed down a decision allotting a section of valuable land near that point to the cement corporation. The land was taken up by the railroad company under the indemnity land grant of July 25, 1868, but the Victor Portland Cement Company instituted a contest, alleging the area to be mineral bearing. The register found that the land is productive of deposits of shale, and is therefore mineral bearing. The property in controversy is said to be worth more than a quarter million dollars.

The Perfection Brick Company was chartered under Pennsylvania State laws, March 6. Capital \$10,000.

The Tiffin Crushed Stone Company, Ranger, Tex., will install new machinery in their plant at that point.

Richland Quarry Company, Houston, Tex., has been incorporated with a capital stock of \$10,000. Incorporators: Travis Holland, V. R. Currie and H. R. Hughes.

Fire last month destroyed the boiler house and one of the large stone crushers of the J. E. Baker Company, Billmyer, Pa. The loss was partially covered by insurance.

The B. C. Farrar Plastering Company, Cleveland, Ohio, has been incorporated by B. C. Farrar, H. B. Farrar, H. I. Farrar, C. A. Long and H. E. Elliott. Capital stock, \$7,000.

The Victor Cement Company, Los Angeles, Cal., has been incorporated with a capital stock of \$4,000,000. Directors: Lucius P. Green, M. M. Entler and Jesse F. Waterman.

The Southwestern Quarry Company, Creta, Okla., has been organized to develop dolomite and gypsum deposits on a large tract of land, and have issued \$50,000 worth of bonds to begin developments.

Santaquin Lime & Quarry Company, Salt Lake City, Utah, has been incorporated with a capital stock of \$50,000. W. Mont Ferry, president; Harvey J. Jones, secretary and treasurer; Daniel Hamer, vice-president.

The Peerless Lime & Stone Company, Roanoke, Va., has been incorporated with a capital stock of \$50,000. President, George Longcor, Scranton, Pa.; treasurer, A. D. Bentz, Carlisle, Pa.; secretary, J. E. Gish, Roanoke. The lime kilns will be located at Ellett, Montgomery County, on the Virginia railway.

The National Alabaster Company, Omaha, Neb., was organized last week by F. H. Perry and others, with a capital stock of \$450,000. The company will eventually have offices in Chicago, New York and Seattle, but until the plant is built the head office will be at Hot Springs, S. D., in charge of Mr. Perry, who will be general manager.

A force of thirty men has been engaged for the past two weeks in clearing the ground at the Hercules quarry, Tenino, Wash., preparatory to reopening the plant. Starting April 1st the company will begin shipping 42 carloads of rock daily for the government jetty being constructed in Gray's Harbor.

The Blue Trap Rock Company, of Little Rock, Ark., has filed articles of incorporation, with a capital stock of \$50,000, of which \$30,000 has been paid in. The officials of the company are: Chris Ledwidge, president; S. L. White, vice-president, and W. D. Cammack, secretary and treasurer. The plant is reported to have a capacity of 1,000 tons a day, and is now running at full capacity.

The Sharon Clay Products Company, of which W. C. Taylor, of Sharon, Pa., is president, is letting contracts for \$11,000 worth of new machinery. This includes one brick machine with a capacity of 70,000 brick daily; two puddle mills, each with a capacity of 36,000 pounds a day, and two redressing machines and one cutter. The Bonnot Company, of Canton, Ohio, got away with the contract.

The Harris Limestone Company has been organized at Glasgow, Ky., with a paid up capital of \$10,000. The officers are: A. L. Harris, president; George R. Lewis, vice-president, and T. P. Dickinson, secretary and treasurer. The directors are W. B. Smith, L. W. Preston and L. W. Redford. The company will manufacture limestone for fertilizer, sand for building purposes and stone for roads and streets. Machinery has been ordered.

The plant of the Northwestern railroad at Quarry, Ia., is about due to resume operations, and, it is thought, will soon be running at full capacity. The machinery of the crushing and stone handling plant is being made ready and it is expected to begin taking out stone for ballast as soon as the weather will permit. Employment is given to about 100 men and the plant has a capacity of 50 cars of crushed rock ballast daily, all of which is used by the Northwestern railroad.

DANGERS OF THE FIRE WASTE.

The year has started off with fire losses at the rate of a million dollars a day. While much of this was due to the prolonged and excessive cold weather, yet it does not promise well for the reduction of fire waste which it was hoped to secure in 1912 as a result of the educational work done last year. The 1911 fire losses were \$234,337,250, but the loss for January of this year was 50 per cent ahead of the same month last year. As usual, most of these fires were due to the national fault of carelessness. While zero weather may account for the unusual number, most of them were easily preventable. Overheated stoves and furnaces, defective flues, and the thawing of frozen water pipes with burning paper were the chief causes of the cold-weather fires. But it is carelessness approaching criminality to run stovepipes near wood, to build chimneys improperly and leave them uninspected, to start a bonfire by a lath partition in a home to thaw out frozen pipes, and to do all the other foolish and reckless things that make the fire waste of the country a quarter of a billion dollars a year.

The people have this reduction of the fire waste and its terrible toll of life and property in their own hands. So long as they are indifferent to the ruinous drain upon the national resources involved in this needless waste, so long will the fires continue and multiply. Abroad, the man who would throw a match into a heap of rubbish, or who would fail to protect an overheated stove or flue, would go to jail. And the fire losses abroad are one-tenth what they are in this country, while the loss of life is nominal in comparison. With the majority of the fires due to carelessness, individual and municipal, the urgent need is the development of a sense of personal responsibility for greater precautions, especially in such a time as this, and January losses of a million dollars a day should help enforce the lesson.

Arizona Lime Company, of Paris, Tex., will shortly erect lime kilns with an annual capacity of 15,000 tons. They will use wood for fuel.

The board of harbor commissioners of Los Angeles, Cal., at its recent meeting, decided on the use of concrete in the harbor improvement of that city instead of creosoted wood.

Continuous Concrete Pipe Company, Los Angeles, Cal., has been incorporated with a capital stock of \$250,000; subscribed, \$3,000. Directors: J. H. Carr, George R. Norton and L. W. Bentz.

The Kelly Construction Company, of Bryan, Ohio, has been incorporated with a capital stock of \$10,000 to deal in cement products. The incorporators are O. L. Kelly, H. M. Sharp, H. M. Kelly, W. L. Crummel and Charles M. Wertz.

Articles of incorporation were recently filed at Fresno, Cal., by the Concrete Brick & Tile Company, organized by Ralph G. Price and J. E. West, of Visalia; George E. Waddell, of Exeter, and C. E. Johnston and W. W. Welch, of Fresno.

Amenia Farm Lime Company, Amenia, Dutchess County, New York, has been incorporated. Mining and dealing in lime, etc. Capital stock, \$100,000. Incorporators: D. B. Kirby, New York City; C. J. Hand, Plainfield, N. J.; M. O. Walton, Springfield, N. J.

The Church Quarry Company, Sibley, Mich., has sold its lime kiln plants at that point to the Solvay Process Company, the transfer becoming effective March 1st. The consideration involved has not been made known and it is understood the plants will continue operation as before.

Automatic Stucco Machine Company, Port Chester, West County, New York, has been incorporated to manufacture stucco machines, cement, cement products, etc.; capital stock, \$50,000. Incorporators: Wm. A. Mills, Port Chester; Richard H. Cunningham, 74 Worth street, Stamford Conn., and E. B. Southworth, 64 Wall street, New York City.

The Peerless Brick & Artificial Stone Company, Los Angeles, Cal., has acquired the property of the Arroyo Seco Crushed Rock & Sand Company, of that city, and has commenced the erection of a brick plant and artificial stone works. The Slauson Avenue plant of the same company has been completed and Milton Hesselberger, civil engineer, has been made vice-president. The capacity of the two plants will be in the neighborhood of 100,000 bricks per day.

CONCRETE IN LIGHTING.

How Cement is Employed in Illuminating Standards For the Beautification of Highways.

In the country-wide movement for civic beauty which has interested property owners as well as national, state and municipal officials, and has resulted in the creation of municipal art commissions and municipal art clubs and associations in all of the large and nearly all of the smaller cities for the closer study of civic improvement, the ornamental illuminating standard is receiving a great deal of deserved attention along with other equally deserving details.

The benefits to be derived from better street lighting are such that they can hardly be overestimated, and the fact that a large percentage of the installations made up to date are due wholly, or in part, to private enterprise and the employment of private capital, leaves no doubt that the benefit secured and the purpose accomplished fully justifies the expense.

In business property particularly, it is a generally recognized fact that the value is directly proportionate to the number of people who pass it. It is also a generally accepted fact that the crowd will follow the light, and especially so, if the light is presented in the most artistic and attractive form. Property on any public thoroughfare can be increased in value, as can the streets tributary thereto, by a good system of ornamental illumination. This equally applies to residential districts and boulevards. In public park development, the ornamental illuminating standard is almost as indispensable to the artistic scheme as is its primary purpose of illumination.

The present ornamental illuminating standard is the result of years of development from the old wooden

post with the kerosene lamp of years ago, through the crude cast iron gas lamp-post of which many still exist, to the period of wooden posts with metal arms from which were suspended the early arc lights. From this point on, the subject of lighting standards began to receive attention from the artistic as well as the utilitarian standpoint. In all instances metal was the medium.

The latest and highest development of the subject of illumination has served to discard the old theory of high candle power at long distances apart and high in the air in favor of the far superior method of lower candle power at shorter distance and nearer to the side-walk and street levels. The low-candle-power-at-short-interval plan gives the advantage of uniform distribution of light, avoids dark spots, prevents accidents, lessens the possibility of robberies, is easier on the eyes, and is generally more agreeable and attractive. The latest and highest development of the ornamental illuminating standard has resulted in the reinforced granite concrete illuminating standard, in which can be readily combined beauty, utility and economy.

The artistic possibilities of the reinforced concrete ornamental illuminating standards are practically unlimited. The Doric design illustrated is a good example of what can be done. This standard was produced by the Pettyjohn Company, of Terre Haute, Ind., and represents, perhaps, the highest development of the reinforced concrete standard. This standard has the granite finish with all of the appearance and durability of granite. It is distinctly an improvement on the concrete lamp posts, especially designed and used by the commissioners of Lincoln Park, Chicago, which have attracted so much interest and attention from the entire country. Their use on Wabash Avenue, Terre Haute, is the best example of what they can accomplish in the dual purpose of illuminating satisfactorily and adding to the attractive appearance of the street.

In point of economy, it may be said that the cost of the ornamental granite concrete standards at Terre Haute is about one-tenth of the cost of natural granite and about one-half the cost of cast iron. The freedom from painting and other repairs put them quite in a class alone as to the cost of maintenance.

As to durability, we have not as yet found a material which will out-live concrete. In the ornamental illuminating standard, the reinforced concrete standard will be standing practically unaffected long after the metal standard has passed on to the junk heap.

Because of its many advantages, the ornamental reinforced concrete illuminating standard has come to us to stay. The sooner the advantages are studied and appreciated by those interested in civic improvement, the more artistic, the more durable, and the more economical will be the plans for beautifying the cities, parks, boulevards, streets, and residential districts which are the objects of their endeavor.

The standards are molded in heavy substantial cast iron molds, from material of a special formula containing actual crushed granite, which has been developed by the Pettyjohn Company after many years of experience in connection with the manufacture of ornamental concrete products. All members are reinforced during the process of manufacture. Four corrugated bars of one-half inch diameter being used longitudinally, and seven three-eighths inch diameter corrugated bars bent to a circular shape and being placed a foot apart. The standards are molded hollow so as to permit of the insertion of gas pipes, electric wires and conduits, and when erected, this central space is filled with slush concrete and reinforcing rods, so that the standards are then solid and reinforced with three distinct systems of reinforcing, some of which run from the standard itself into the foundation, thus giving great strength and stability to the standards, and effecting much economy in the freedom from breakage of globes or the filaments in the electric bulbs.

Practical experience has shown that blows which would completely demolish an iron standard and break all of the glassware upon it, would have but little effect upon the reinforced concrete standards which are heavier, more massive and more substantial in every way. Time has not the slightest deteriorating effect upon these standards, and should they become chipped by a runaway or other violence, the place can easily be repaired with the same composition with which the standards are made, and so perfectly as to be not noticeable.

In the manufacture of the standards, after the molds are removed, they are given a surface treatment which brings out the life, sparkle and glisten of the natural granite, and later they are given another surface treatment which has the effect of rendering the standard thoroughly waterproof, sealing all the pores and still further increasing the hardness of the exterior surfaces.

In addition to the granite concrete, which has a surface molded like natural granite, the standards are also made in pure white, several shades of gray and buff, and upon special order are manufactured to

match various kinds of natural stone. For installations in which durability, general appearance and economy are the important factors, and the character of the surface texture of minor consideration, the standards are made of the ordinary sand and cement mixture at about one-half the price asked for the granite concrete standards. The buffs, grays and whites are sold at intermediate prices.

While but one design is illustrated in connection with this article, the company has numerous other stock designs, and in addition to this is prepared to make the standards in special designs, sizes, and with various surface texture, so that the possibilities are almost unlimited.

The Pettyjohn Company has issued an attractive booklet entitled "Ornamental Illumination," which will be mailed gratis to interested parties.

The Bruett Cement Block Company, of Fond du Lac, Wis., has placed its plant in operation.

The Okaw Contracting Company, of Vandalia, Ill., has increased its capital stock from \$15,000 to \$30,000.

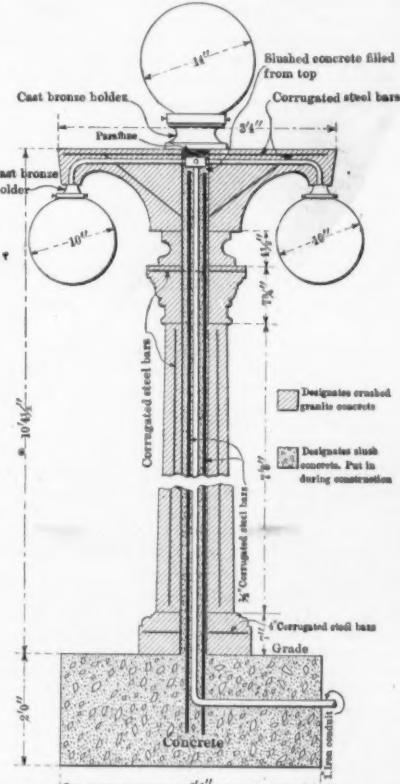
The Schaefer Manufacturing Company, of Berlin, Wis., has taken up the manufacture of a new concrete mixer, designed by Frank D. Chapman, who has recently joined the concern.

The National Steel Housing Company, of Milwaukee, manufacturer of steel and cement dwelling houses, has been incorporated with a capital stock of \$100,000. The incorporators are George Griss, John Lochner and Anthony E. Flees.

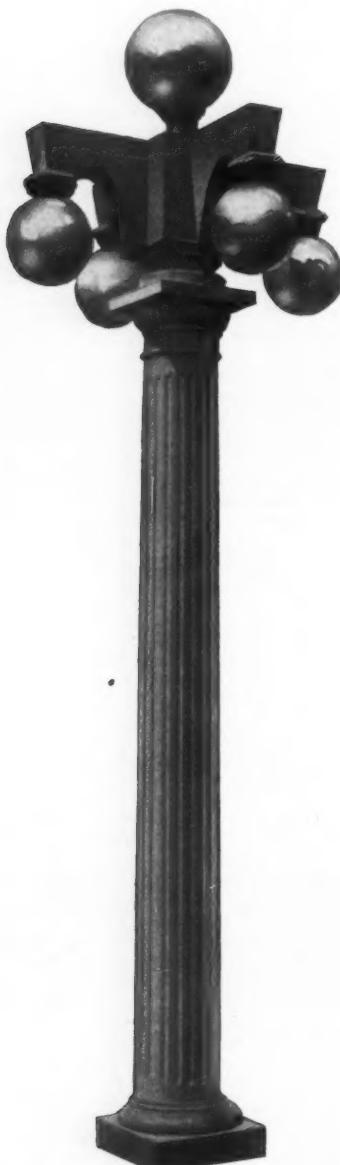
The Sam W. Emerson Company, of Cleveland, Ohio, has been incorporated with capital stock of \$10,000 to do general contracting. The incorporators are Sam W. Emerson, L. W. Wickham, H. F. Parks, Edith C. Hoag and L. H. Smythe.

The Ohio Ballast Company, of Columbus, Ohio, has been incorporated with a capital stock of \$75,000 to deal in concrete and concrete materials. The incorporators are L. E. Sturm, J. T. Adams, H. Donnelly, D. Donnelly, H. K. Stafford and S. A. Webb.

The Great Northern Concrete Company, of Milwaukee, has filed a voluntary petition in bankruptcy. Liabilities are scheduled at \$45,218.92, including \$27,413.79 unsecured claims. Assets are given at \$8,873.86, including machinery listed at \$8,576.92. John B. Dupont is president.



SECTIONAL VIEW REINFORCED CONCRETE LIGHTING STANDARD.



REINFORCED CONCRETE LIGHTING STANDARD.

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MARCH 22, 1912

ROCK PRODUCTS

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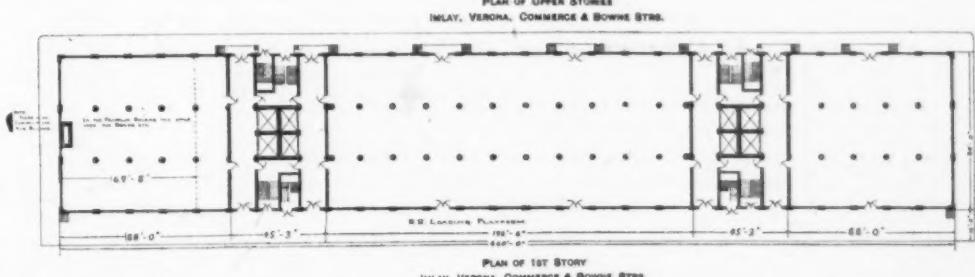
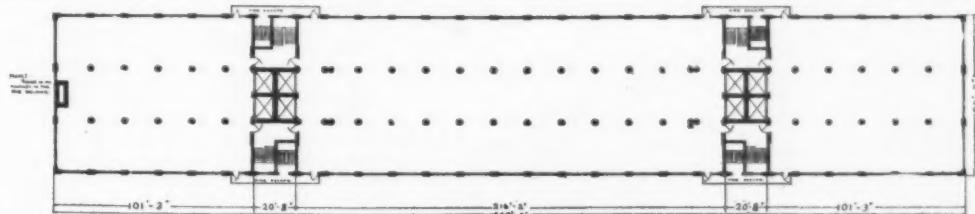
IMMENSE

Two Tremendous Concrete Structures to Be Erected By the New York Dry Dock Company at Atlantic Basin, Brooklyn.

New York, N. Y., March 18.—This great metropolis is not backward in a great many things, but there is no denying that the West is far ahead of us in the utilization of cement and concrete for building purposes. Our engineers are now devoting a great deal of attention to this construction material and during the next decade New York and the rest of the East will figure higher in the statistical reports of the country covering this classification of structure.

Until the last few years the use of concrete was chiefly confined to smaller structures, such as bungalows at the seashores and garages—the latter being particularly popular, as the fire risk was reduced to a minimum. Very few large structures were constructed of this material, with, of course, the usual notable exceptions. The innumerable factory towns just across the river in Jersey, however, were well represented by buildings of this type and a fairly representative number can be seen in these little beehives of manufacturing centers. A few of them put up years ago and really the pioneers of the present kind were nothing more than dismal failures and this has quite naturally created a prejudice against the type of building in the eyes of many practical men. A number of these building failures still stand and it would be to the interest of the concrete people to have them removed.

Of late years, however, with the really wonderful advance made in the construction of concrete buildings, confidence has been restored and New York and the East can now boast of some really massive and excellent work in this line. The dock and warehouse companies are especially keen to this type of structure and a number of new buildings have been announced of late and important additions are to be made to groups of buildings already erected. The Bush Terminal Warehouses are really a small city of concrete structures covering



MAYNICKE & FRANKE ARCHITECTS
125 EAST TWENTY-SIXTH STREET, NEW YORK CITY

Brooklyn water front and the buildings now standing are old-fashioned brick structures.

The two six-story buildings to be erected are each 460 feet long by 80 feet wide, located just south of Hamilton Avenue. They were designed for manufacturing purposes by Maynicke & Franke, 25 East Twenty-sixth Street, New York City, and will be equipped with the latest fireproof and fire escape devices. The buildings will be equipped with the sprinkler system and four staircases in each structure will be smokeproof tower exits, which can be reached through outside balconies.

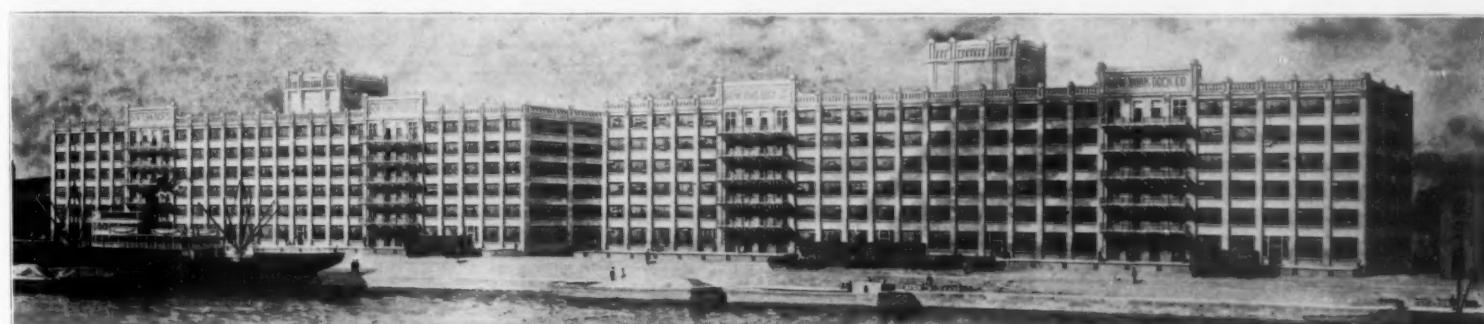
All floors will be waterproof, so that in case any section of the building is flooded with water there will be no damage done to the floor below.

Railroad tracks giving direct connection by means of a daily float service to and from all the railroads entering New York City will adjoin the loading platform on the water side of the buildings. Ship-

will be nothing in them to burn. Thus, then, they will be fireproof. The work of demolishing the old stands was begun early in October, and the contract is now being rushed to completion. The Osborn Engineering Company, of Cleveland, is in charge of the work, and it has agreed to have the job finished in late March.

The Paving Contractors' Association of Chicago has been incorporated for the advancement of trade interests. The incorporators are John Ogara, C. C. Lakin and Irving D. Potter.

The General Building Contractors' Association of Du Page county, Illinois, has been incorporated for advancing business interests. The principal office will be at Glen Ellyn. The incorporators are N. Randall, David S. Adams and W. A. Melcher.



NEW YORK DOCK COMPANY'S IMMENSE SIX-STORY CONCRETE BUILDINGS, MAYNICKE & FRANKE, ARCHITECTS.

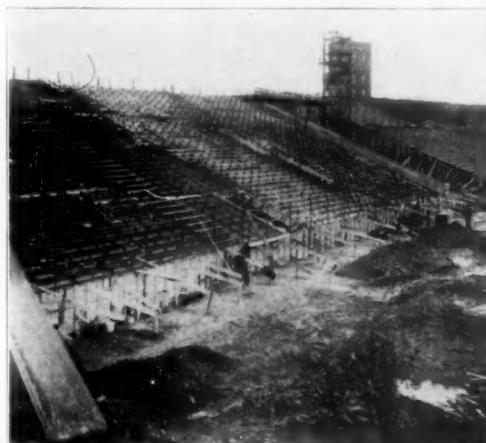
in all many acres. The most recent announcement in this line are buildings for the New York Dry Dock Company to be erected at Atlantic Basin, Brooklyn. The group will consist of two huge six-story reinforced concrete structures and it is understood that this operation is merely a forerunner of vast improvements to be made by this company. The company at present owns a large area on the

ments for coastwise, river and sound lines will be handled by the steam lighters of the company direct from the factory to the piers of the various transportation lines.

The floors of both structures will be divided into three lofts, the center one being double the size of the other. Each building will have eight large elevators and eight staircases. A special study has been made of the handling of freight from the railroad cars, which will deliver the goods on a sixteen-foot platform on one end and for the handling of goods from trucks on the other side of the building.

The Decatur Construction Company, of Decatur, Ill., has been incorporated with capital stock of \$2,500 to do contracting. The incorporators are E. C. Westwood, D. C. Allen and I. Thorsen.

The American Construction and Supply Company, of Dayton, Ohio, has been incorporated with a capital stock of \$10,000 to do contracting. The incorporators are T. J. McCormick, T. F. Hudson, A. M. Myers, L. C. Hatch and Z. N. Wright.



DETROIT'S NEW BASEBALL PARK STAND SHOWING METHOD OF CONSTRUCTION.

Detroit, Mich., March 16.—One of the most important undertakings in the history of Detroit contracting is now nearing completion in the new Bennett Park—the home of the Detroit American league baseball team. The immense stands—which will seat 23,000—will be entirely of concrete. The stands will extend almost completely around the field, and they will be 96 feet in depth. They are the most complete of their kind in the country. There are runways of concrete, and the feature of the park is that though there are 17 exits there is not a step leading to any of them.

The contractors (and they have constructed baseball parks in other parts of the country) say this is the most complete plant in the United States. It is not so large as the New York or Chicago or Philadelphia parks, but cement has entered more generally into the construction work. The new stands replace the old wooden pavilions, and there



BLEACHERS—RESERVED SEATS TO RIGHT—BUILT OF REINFORCED CONCRETE.

STUCCO HOUSES.

Typical Specifications For Work of This Character That Will Help the User of Cement.

The merits of the stucco house are now so well recognized that arguments in its favor seem to be trite. It is assumed that the prospective builder and his architect want a stucco exterior, and realizing that when built the house will look as substantial as stone, brick or solid concrete, they want a structure that will age slowly and gracefully through decades—not fail perceptibly from year to year.

This specification is offered with this realization promised, but it must be borne in mind that poor work is dear at any price. A faithful observance of every detail will give results gratifying to the architect and satisfactory to the owner.

Metal lath is recommended because wood lath absorbs moisture required by the mortar. Wood lath dries out and shrinks away from the plaster, following which the alternate shrinkage and swelling resulting from moisture causes unsightly cracks and finally failure. Wood lath, also, increases the fire risk and will harbor vermin.

Metal lath in combination with cement plaster is "reinforced concrete" and will insure an unbroken surface—to be assured of which is at least an uncertainty when the plaster is applied direct to a wall set up in block form. The air space afforded by metal lath construction is the most efficient insulation.

A careful following of this specification will absolutely give a construction economical and enduring.

Framing and General Construction.

Flimsy construction in framing is false economy.

Care should be taken that all trim be placed the proper distance from the studding or furring to show its right projection after the plaster is on. It is a common mistake to allow too little for the lath and plaster, with the result that mouldings which should project from the face of the wall are back from it or partly buried under the plaster, thus missing the effect desired. About $1\frac{1}{2}$ " should be allowed for the lath and plaster, making sure that the projection of the moulding to show when finished is not measured in as part of this thickness.

Furring.

Use painted or galvanized steel rods or painted or galvanized crimped furring. One-quarter inch is best, and it should not be over one-half inch at the most. This furring is to be applied along the face of the studding with galvanized staples.

Insulation.

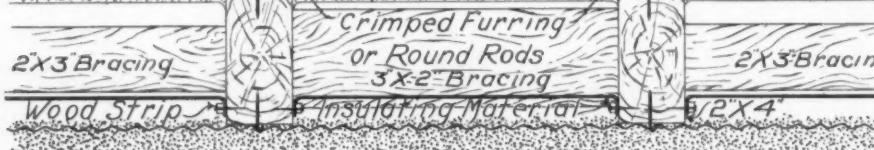
After the lath on the outside has been back-plastered the air space may be divided by applying heavy building paper, quilting, felt or some suitable insulating material between the studs, fastening it by nailing wood strips over folded ends of the material. This insulation should be so fastened as to clear the 2" bridging, leaving the preponderance of the air-space on the outside. Care must be taken to keep the insulating material clear of the outside plaster and to make tight joints against the wood framing at the top and bottom of the spaces and against the bridging where the 3" face intercepts.

Corner Bead.

If corner bead is not used, there should be 6" strips of metal lath bent around the corners and stapled over the lathing unless the sheets of metal lath as applied are folded around the corners. Even though corner bead is used, it is a good precaution

*Painted Expanded Metal Lath
Not Less than 3 lbs. to the sq.yd.*

*Cement Plaster and
Stucco Finish*



Detail Showing Section of Exterior Wall

The best will prove cheapest. The studs, spaced at 12" between centers wherever possible, should be run entirely from foundation to the rafters without any intervening horizontal grain in the wood. These studs should be tied together just below the second story joists by a 6" board, which should be let into the studs on their inner side so as to be flush and securely nailed to them. This board will also act as a sill for the second story joists, which in addition will be securely spiked to the sides of the studs. At two points between the foundation and the eaves, brace between the studding with 2"x3" bridging placed horizontally, but with the faces of the bridging inclined in alternate directions in adjacent spaces.

All roof gutters should be fixed and down-spouts put up before the plastering is done; the down-spouts should be temporarily placed about a foot from the wall so there will be no break in the plastering where they are to be finally fixed.

Wood copings or rails for tops of parapets, balustrades, etc., are not so good as cement, for they may curl up, warp, check, crack, and in various ways fail to do what they should—keep water from getting behind the plaster. This also applies to brick chimneys which, when plastered, should have wide and tight caps of concrete or stone to prevent water running behind the plaster.

If only wood sills are used, they should project well from the face of the plaster and should have a good drip; either by being placed with a downward slant or by a groove rebated in the under side of the sill near enough to its edge that it will not be covered by plaster. The drip is an essential of good stucco construction that can not be slighted. It must be used to prevent water getting behind the plaster.

Lath and plaster should not be carried all the way down to the ground. This same restriction applies to brick or stone.

4 bushels cattle hair.

Make up at least three days before using.

Cement Mortar—

2 parts of clean sharp sand free from loam.

1 part Portland cement.

Mix fresh in small batches as used.

The lime mortar and cement mortar should be mixed and tempered separately, measured carefully, equal parts of each, and mixed well together.

In plastering over the face of the stud, the plaster should be forced well through the lath in order to fill entirely the space between the lath and the stud.

The back-plastering should be a heavy coat well troweled so that the lath is entirely enveloped. The finish coat may be done in a way to get any one of the many surfaces which give stucco its charm. This coat should contain no lime, as it makes the wall more porous, and if a lighter color is wanted than can be gotten with ordinary cement, a white Portland cement should be used.

The waterproofing acceptable to the architect should be mixed with the last coat of the exterior according to directions given by the waterproofing manufacturer. The lathing and plastering on the inner side of the wall need not differ from ordinary practice.

The exterior plaster must not be allowed to set rapidly; if necessary, hang a curtain in front of the wall of burlap or other material that can be kept moist for a couple of days. Stucco should never be applied when the temperature is below freezing.

Stucco on Brick.

In applying stucco over brick chimneys a $\frac{1}{2}$ " painted or galvanized steel furring strip not lighter than 22 gauge should be fastened to the brick at 12" centers with galvanized staples 2" by No. 9 gauge driven into the mortar joints. The lath is fastened to the furring with No. 18 gauge galvanized wire, run through under the furring and the same material used for lacing the ends of the sheets together between furring strips.

The same mixture for plaster is recommended for this work as on the metal lath on studding. Before plastering, the brick should be well wetted to prevent its absorbing the moisture from the plaster, and the first coat should be forced through thoroughly so that the entire space back of the lath is filled with the Portland cement plaster and the lath enveloped.

NEW STATE GEOLOGIST.

Nashville, Tenn., March 21.—Albert H. Purdue, of Fayetteville, Ark., has taken charge of the position of State Geologist of Tennessee and will be located in this city. He was superintendent of mines and metallurgy for Arkansas at the St. Louis Exposition and has been an assistant on the U. S. Geological Survey. This survey, established in Tennessee only a couple of years ago under the directorship of George H. Ashley, who has resigned to accept an offer from the U. S. Geological Survey, of the Chairmanship of the Coal Board in the Land Classification Board, has done a very great preliminary work in Tennessee. Retiring, Mr. Ashley says that the two years' work has confirmed the opinion he had before coming with the Tennessee commission, "that in variety and extent of her mineral and other resources, Tennessee is the peer of any state in the Union, and ahead of most."

Charles A. Benson & Co., of Chicago, have been incorporated with capital stock of \$2,000 to do general contracting. The incorporators are William H. Bolger, John G. Jacobson and Francis D. Connery.

The East Ohio Construction Company, of Youngstown, Ohio, has been incorporated with capital stock of \$50,000 to construct and erect buildings. The incorporators are Guy T. Ohl, M. A. Farrell, H. C. Ditmansen, H. J. Frost and W. C. McKain.

The Nixon Construction Company, of East St. Louis, Ill., has been incorporated with capital stock of \$10,000 to do contracting. The incorporators are U. S. Nixon, Harold Behrens and H. E. Nollman.

The W. M. Stokes Construction Company, of Johnson City, Tenn., has been incorporated with capital stock of \$1,000. The incorporators are W. M. Stokes, P. H. Wofford, F. B. Vines, C. F. Carson and D. A. Vines.

The G. H. Kreamer Construction Company, of Chicago, has been incorporated with capital stock of \$5,000 to do construction work. The incorporators are G. H. Kreamer, Martin Fry and Geary V. Stibgen.



Security Portland Cement

is always dependable because of its unvaryingly uniform composition and thorough burning. Its well balanced Lime and Silica contents furnishes the greatest possible amount of strength and durability. Every barrel is guaranteed to pass Standard Specifications. Splendid Railroad facilities and big output and storage capacity enable us to guarantee prompt shipments in any quantity.

Berkeley Hydrated Lime

Of highest calcium content, perfectly slacked and purified at the Kiln by special process. It will not air-slack and keeps indefinitely without deterioration. Renders concrete waterproof and vermin-proof. Especially adapted for cement mortars.

"ALCA" LIME

combines all the good qualities of old fashioned Lime Mortar with quick hardening qualities so essential in modern plasters and stuccos. Prepared with or without hair.

Write for Booklets which give information you ought to know about these products

Security Cement & Lime Co.

Main Office Western Offices
BALTIMORE, MD. PITTSBURGH, PA.



THE Standard Brands

OF
PORTLAND CEMENT

Lightest in Color
Highest Tensile Strength

ALWAYS UNIFORM

Always the same high quality. Prompt shipment guaranteed and made possible, as each mill is located within switching limits of the two greatest railroad centers of the West. You are assured of your orders being promptly filled.



SALES OFFICE:
Long Bldg., Kansas City

MANUFACTURED BY
Union Sand & Material Co.

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KANSAS CITY
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Tell 'em you saw it in ROCK PRODUCTS



CONCRETING IN COLD WEATHER

A Free Booklet

A complete discussion of the question of mixing and handling concrete in freezing weather. Of vital importance at the present season by reason of the increasing use of cement during the winter months and the demand for rapid building construction.

Address the nearest office of the Company

UNIVERSAL PORTLAND CEMENT CO.

Chicago Pittsburgh Minneapolis
72 West Adams St. Frick Building Security Bank Bldg.

Annual Output 12,000,000 Barrels



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An Extra Heavy, Extra Strong
WATERPROOF PAPER BAG
For Cement, Plaster, Lime, Etc.

West Jersey Bag Co.

Camden, N. J.

Spring Trade Suggestion



HANDLE “Chicago AA” Portland Cement

“The best that can be made”

If you appreciate handling a product which has no superior, and one that by reason of its superiority, is preferred by the consumer; if service, fair and courteous treatment appeals to you; if you value the co-operation of the manufacturer—then we think we can secure your patronage during the coming season. Such is OUR product and our method of marketing it, recognized and appreciated by the dealer for fourteen years. Let's hear from you. A postal card will bring prices.

PRESENT OUTPUT 1,500,000 BARRELS ANNUALLY

Chicago Portland Cement Co.

J. U. C. McDANIEL, Sales Manager

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 Ornamental Concrete Stone
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Analysis 99.90%

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You can order less than a carload, in fact shipments as small as five 175 lb. bags can be delivered economically.

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MEACHAM & WRIGHT COMPANY CEMENT CHICAGO



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 INSPECTION CEMENT & REINFORCING STEEL
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Chicago Montreal New York San Francisco Pittsburgh Toronto St. Louis Mexico City London Seattle

“Riverside” Plaster of Paris



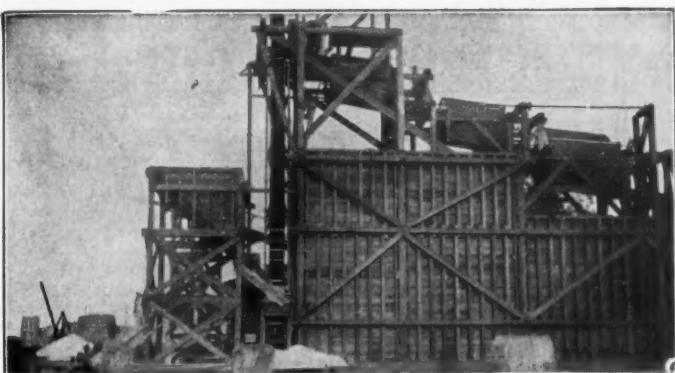
is made from the best selected Nova Scotia Gypsum, and is the recognized standard in quality. It sets slowly, works cool, has great tensile strength.

It is the lightest, the finest, a pure white in color, and absolutely uniform.

It has the greatest covering capacity and makes the hardest wall.

If you are interested in Finishing, Casting or Dental Plasters write for our “Riverside” Booklet. It tells how all Plaster of Paris is manufactured and why “Riverside” is the highest grade of Plaster made.

Rock Plaster Manufacturing Co.
381 Fourth Ave. - - - New York City.



A Portion of the Plant of the Norfolk Sand & Gravel Co.

At this plant sand and gravel is unloaded from barges on the river into the hopper at the left of the picture. From this hopper it is elevated to the Gilbert Screens which wash and size the material and pass it to the bins below. From these bins a belt conveyor receives the material and delivers it to large concrete bunkers from which it may be drawn to the wagons.

The design of this plant provides large emergency storage space, large bin storage, and yet the screening plant proper is very low. This plant is perfectly adapted to the local conditions and delivers a high quality of material most economically.

"S-A" Gravel Washing Plants Are Standard

We originated the general design of plant which is used almost entirely today. We have adapted our machinery to the special requirements of this work and have led in its improvement and development. We have designed and erected practically all of the successful plants now in operation.

By standard plant we do not mean that one design can meet all conditions. The same general principles are followed always, and the parts are standardized, but each installation has required special study and treatment.

We are always glad to submit designs and suggestions.

**Stephens-Adamson
Mfg. Company**
Aurora, Illinois

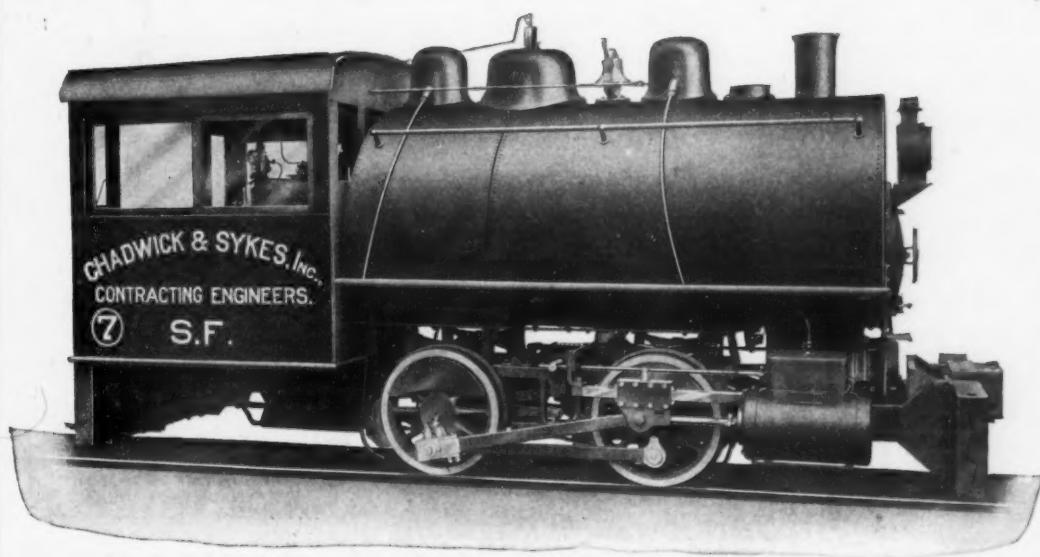
CHICAGO
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AMERICAN LOCOMOTIVE COMPANY

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2101 Beaver Avenue, Pittsburgh

N. B. Livermore & Company, San Francisco; Los Angeles; Seattle, Portland, Oregon

There are several ways of working a contract, but there is only one BEST way.

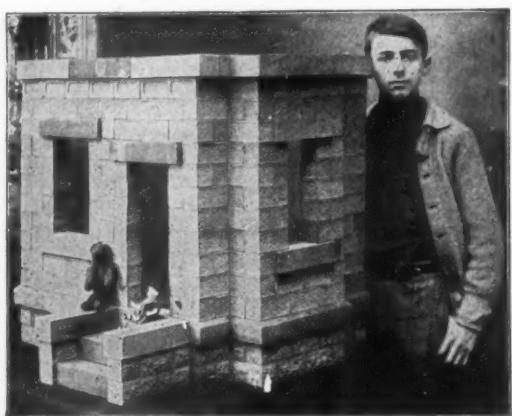
There is only one right way to buy a locomotive and that is to buy from the concern having the greatest knowledge and experience in the business.

You have had to pay for your experience. You do not have to pay anything extra for ours.

There is much in the selection of a locomotive that cannot be had from pictures or catalogues.

We have men of experience who can help you select your power to get an extra profit for each yard from your contract.

Write or wire us, or better—come to see us.



Something Fine for Your Boy AND FOR YOURSELF ALSO

The cut shows a Doll's House the boy has built for his sister, using real hollow cement blocks, **made by himself** in the SIMPSON JUNIOR CEMENT BUILDING BLOCK OUTFIT. This is only one of scores of houses of all kinds that he can build—a workshop for himself, a chicken coop, a dog kennel, an enclosure for a garbage can, models of residences, schools, churches, stores, etc. Notice the rock face foundation blocks, the bush hammer range blocks, the panel face blocks, the water table, cornices, copings, steps, window and door sills and caps. The Junior Outfit produces them all. This is the latest addition to the list of

Simpson Molds

It has wonderful possibilities and is the greatest educational toy a boy ever had—but it is very much more than a toy. The price is **THREE DOLLARS**, by express, charges prepaid to any point in the United States. We have a special circular telling all about it which we would like to send you.

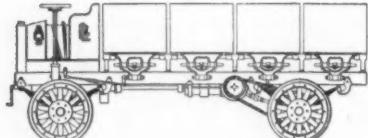
But this is only one small feature of our business, which is chiefly the manufacture of molds for

Porch Trimmings, Garden Furniture and Other Ornamental Work

Our Catalogue is the greatest in this line ever issued, containing a great number of special half tone engravings of finished porches and other structures. Send for it, using your business stationery or enclosing your business card.

THE SIMPSON CEMENT MOLD CO.,

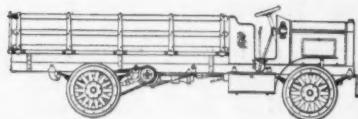
119 VINE STREET
COLUMBUS, OHIO



“LONGEST TRUCKS”

(Made in Louisville.)

Both types made in three and five ton sizes.



Not assembled but designed and manufactured complete in our own shops. (We buy only the chains, roller bearings and muffler. Castings made from our patterns.)

After eight years of experience in the Automobile business, both mechanically and commercially, we have in the “Longest” truck selected those points of construction which have proven themselves by test to be right.

Examine our various selections in construction, compare them with the best points in other leading trucks. We have not experimented. Only tried out and approved principles have been adopted.

Our first truck was exhibited at the Louisville Automobile Show in March, 1910. Since then a thorough test has convinced us that we have a first-class article which we can recommend in every respect and which will stand the tests of time.

LONGEST BROS. COMPANY, (Incorporated) Louisville, Kentucky

“STAG” BRAND MANGANESE STEEL

WEARING PARTS FOR ROCK CRUSHERS AND CEMENT MILLS

RENEWABLE POINT DIPPER TEETH (Pat'd)

“MISSABE” STEAM SHOVEL DIPPERS

MADE ENTIRELY OF “STAG”
BRAND MANGANESE STEEL

EDGAR ALLEN AMERICAN MANGANESE STEEL CO.
CHICAGO, ILLINOIS

NEW CASTLE, DELAWARE

PERMANENT and THOROUGH
Water-proofing of Cement Work
results from the use of

Maumee Compound

SPECIFICATIONS AND SAMPLES
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The Maumee Chemical Co.

403 ST. CLAIR BUILDING
TOLEDO, O.



Tell 'em you saw it in **ROCK PRODUCTS**

MARCH 22, 1912

ROCK PRODUCTS

49

CHICAGO SHOW

Exhibition Under the "Auspices" of the Cement Products Exhibition Company Proves the Best Held in Home City.

The Chicago cement show of 1912, while not the largest that has been held, was an improvement over its predecessors in many respects, principal among which was the character of the exhibits. It was a noticeable feature of this show that more cement products were shown than at any previous exhibition.

At the outset the show was handicapped somewhat by bad weather, but this did not interfere much with the attendance or the enthusiasm, which were all that could be desired.

During the show the annual convention of the Inter State Tile Association was held February 21 and 22.

At the opening meeting there was a general disposition to adjourn till the following day, but President Atwood thought it best to continue. He presented his annual report which told of the accomplishments of the year. He had in mind three things which he said tile manufacturers should do in order to develop their business to its fullest capacity. He said it is essential to produce a better tile than has been produced. Perfection in tile manufacture was to his mind the one thing for the manufacturer to keep before him. The second matter to be considered was that of cost. He said every tile man should know exactly what his tile cost him. At association meetings recently there has been much consideration of overhead costs which usually are not taken into consideration at all, that is, the interest on the investment, insurance, etc. The third consideration he urged was the manufacture of side lines that would increase the profits of the plant. With diversity of product, if one line happened to be slow there might be a steady demand for some other line. He believed that there should be laws in the various states governing the quality of tile.

The spirit of the convention, as voiced by the president and other speakers, was for a larger plant,



THE GREAT FIRING LINE OF THE LEHIGH.

to educate the people, and he believes in the work of the association being broadened and securing the services of a secretary who would devote the greater part of his time traveling around among tile men to assist them in their work and bringing out the advantages of the cement product.

In the afternoon session there was a paper by D. G. Keith, of Ceylon, Minn., who spoke on the advantages and costs of the washing of sand to the tile manufacturer. There was general discussion and the question of silos was introduced by a paper written by M. L. King of Ames, Iowa, and read by C. C. Quinn.

The session yesterday was short and was held in the morning. Two Good, of Pilot Mound, Iowa, gave a talk on "Experience in Bidding on Public Ditches." His talk was most interesting and dealt with the difficulties a tile man has to contend with in dealing with public boards.

C. A. S. Tanner, Jefferson, Iowa, gave a talk on "The Cost of Hauling Tile by Wagon and Auto Truck." His argument was all in favor of the auto truck as being the most economical and satisfactory means of conveyance.

Mr. Hobart, of Barberton, Ohio, had prepared a paper on concrete block manufacture which was read by John Middleton, of Emmetsburg, Iowa. The program today will be as follows:

George L. Diekmann, chief chemist of the Northwestern States Portland Cement Company, Mason City, Iowa, read a paper on "Steam Curing; Tests to Determine Effects of Temperatures and Pressures." It was as follows:

Mr. President and Gentlemen of the Interstate Tile Association: In carrying out a series of experiments to determine the best method for the curing of cement tile, it was my aim to find out the best, cheapest and most practical method to accomplish these results. Two years ago a series of similar tests was conducted at the laboratory of the Northwestern States Portland Cement Company's plant at Mason City, Iowa. These tests were made on small briquettes, and at your meeting in 1909 I presented these results before you. My recent experimental work was carried out along the same line as before, but this time the tests were made direct on cement tile.

I was in hopes of presenting to you results on longer time tests, but on account of the severe winter I was much handicapped to do so. It is my intention to start the same series of tests over again on a longer time period, and you might consider the results given to you today only preliminary.

In making these tests, I will state, that all tests were made on machine made tile, 8"x12" and 1" wall thickness, the average weight of the tile being 24 pounds. The material used was, one part Northwestern States Portland Cement, tested and passed according to standard specifications, to 3½ parts of sand from the Hawkeye Cement Company's pit at Mason City, Iowa. This sand had the following granular composition:

Retained on 10 mesh sieve.....	11.2
Retained on 20 mesh sieve.....	26
Retained on 30 mesh sieve.....	22.5
Retained on 50 mesh sieve.....	21.3
Retained on 100 mesh sieve.....	16.2
Passing 100 mesh sieve.....	2.2
Percentage of loams.....	4

The Ames Junior tile testing machine was used for the experiments on crushing strength.

No. 1. The tile after moulding was kept in air for seven days. Total crushing strength average, 800 pounds.

No. 2. The tile after moulding was kept in air for seven days, and sprinkled with water twice per day. Total crushing strength average, 1,350 pounds.

No. 3. The tile after moulding was kept in air for twenty-four hours, then immersed in cold water for six days. Total crushing strength average, 950 pounds.

No. 4. The tile after moulding was kept in air twenty-four hours, then immersed for six days in hot water, at a temperature of 90° Fahrenheit. Total crushing strength average, 1,200 pounds.

No. 5. The tile after moulding was steam cured for thirty-six hours in steam curing room, the exhaust steam temperature of this curing room 86° Fahrenheit. The steam was applied during the day time only for three days, no steam during night time, making a total in the curing room for three days. The remaining four days, the tile was kept in air. Total crushing strength average, 2,000 pounds.

No. 6. The tile was made the same as No. 5, with the exception that after being removed from the curing room the tile was sprinkled with water twice per day for four days. Total crushing strength, 1,800 pounds.

Two tiles which were made in 1908 and stored for three years in the yard show a crushing strength of 3,000 and 3,500 pounds, respectively.

I will now present to you the results obtained by curing cement tile applying steam pressure of five and ten pounds, respectively. In order to carry on this work, a cylinder 10' long and about 2' in diameter and closed on both ends, was used. The boiler from which the steam was obtained maintained from 80 to 90 pounds of pressure, which was reduced by reducing valve on the cylinder to the desired pressure of five and ten pounds. The Jenkins trap was used to draw off the condensed water.

No. 7. The tile after moulding was placed in the steam cylinder, and gradually for several hours five pounds steam entered the cylinder. The tile was found collapsed.

No. 8. The tile after moulding was allowed to harden for two, four, twelve and twenty-four hours. Placed in the steam cylinder and gradually five pounds of steam entered the cylinder for a period of eight hours. The tile two hours old was found partly collapsed, while the four, twelve and twenty-four hour tile appeared to be hard, but when placed under the machine the four and twelve hour old tile broke before the load was applied.



J. P. BECK, MGR. CEMENT PRODUCTS EXHIBITION COMPANY.

The twenty-four hour old tile showed a total crushing strength of about 800 pounds. The tile was very dry.

In order to supply more moisture during the curing, a perforated pipe was placed along the inner top of the steam cylinder. The perforating was made like a sprinkler to allow the wetting of the tile all over.

The tile twelve and twenty-four hours old was subjected to five pounds pressure for about eight hours, at a temperature of 217° Fahrenheit. Total crushing strength average, 800 to 900 pounds. Tiles twelve and twenty-four hours old were then subjected to 10 pounds steam pressure for eight hours at 225° Fahrenheit. Total crushing strength, 800 to 1,000 pounds. The same tile subjected to ten pounds pressure test after seven days, total crushing strength, 1,000 pounds.

The results obtained from my experiments for the curing of cement tile with steam under pressure are very unsatisfactory, however I intend to investigate this method of curing more fully, but I do not believe that this method will replace the common steam curing using exhaust or moisture steam, as the equipment, maintaining and operating a steam curing plant under pressure will be more expensive.



EDWARD M. HAGAR, PRESIDENT CEMENT PRODUCTS EXHIBITION COMPANY.

doing away with the small plant. This was an encouraging feature of the meeting. Discouragement of the small plant would mean that the business would be in the hands of larger capital and more responsible persons who would produce a better product.

The first paper was by H. H. Dean, of Glenwood, Iowa, past president of the Iowa Cement Users' Association, who gave a most instructive talk on "Cement Testing," dealing more especially with the methods to be used by the smaller users.

B. Blair, Woodstock, Canada, told of the cement tile business in the Dominion, giving interesting incidents from his own experience. He finds it essential to get out among the people and explain to them the advantages of cement tile. By this method he is able to secure contracts which otherwise he would not get. From this he concludes that it is necessary



P. AUSTEN TOMES, PUBLICITY MANAGER ATLAS
PORTLAND CEMENT COMPANY.

From my experiments on these tests, I might add the following conclusions: The curing of tile in exhaust or moisture steam for thirty-six or forty-eight hours, respectively, seemed to give the best results. After the tile is properly cured in this way no sprinkling or wetting is necessary. The highest crushing strength obtained was about 3,000 pounds, which is considered a good test. Eight-inch tile cured in exhaust steam for three days, tested after being cold seven days, 2,000 pounds, showing that two-thirds of the total strength can be developed in seven days, which is certainly all that could be expected. The curing of tile in air only was very unsatisfactory. Sprinkling of the tile showed a considerable increase above the air curing. The curing of tile in cold and hot water showed good results. The common steam curing showed the highest results.

I believe that a great deal of uncertainty can be overcome if the tile manufacturer is equipped with a tile testing machine. These machines are very simple and can be bought or built for reasonable prices, and would be a valuable asset to any manufacturer. The manufacturer would then be in position to regulate the mixture accordingly, and most of all, would impress the prospective buyer with the superior quality of his goods against other competition.

At the afternoon session there was an interesting debate on "Wall Thickness for Large Sizes of Tile," participated in by J. J. Hammen, Sac City, Iowa, and Arthur McHose, Boone, Iowa. The discussion was technical and most elucidating to those who heard it.

L. Bingham, of Estherville, Iowa, led a discussion on "Modern Equipment for a Tile Factory," favoring a large plant, one in which the best product possible could be produced.

W. L. Huffman, of Mason City, Iowa, gave a talk on "Stronger Organization of the Cement Tile Manufacturers," urging an organization that would be nation-wide in its scope.

The election of officers resulted as follows:
President, P. H. Atwood, Armstrong, Iowa.
Vice-President, D. G. Keith, Ceylon, Minn.
Secretary-Treasurer, Howard H. Two Good, Boone, Iowa.

A vote of thanks was given retiring Secretary Simms for his effective work.

THE GREAT GRAY WAY.

The dignity of the exhibition, its homogeneous character that impressed one on account of its harmony, illustrating and telling the story of cement not in one, but a thousand different ways and from a thousand different angles, constituted an overwhelming argument. It was constructed on a broad and liberal plan in keeping with the progressive spirit of the age, and the progressive man who came to the Coliseum entered an atmosphere with which he was not unfamiliar. He felt at home.

A pilgrim along the "great gray way" of cement watched the crowds and wondered what impressions were being made in the thinking minds there assembled. One thing was certain. Every man likes anything, be it one of his fellows, or something inanimate, that is sturdy, strong and will stand the gaff. So they must have taken to the beautiful creations in concrete.

During these winter days, when every normal man feels he has a surfeit of snow and cold, the mind drifts without restraint to sunny days—to the building of a home.

In a thousand minds up and down those aisles, were reared concrete castles—sturdy and strong

homes, or bridges, great warehouses and other monoliths sprang into being.

Some of the architectural achievements of the future years, when cement shall have come in completely to its own, will be only the development and print of the mental photographs taken while walking up and down those aisles at the Coliseum.

If the life of him who makes two blades of grass grow where formerly one existed is a success, then of a certainty are the exhibitor and the indefatigable show management winning glory along the great gray way.

WABASH EXHIBIT.

At the Chicago cement show, which was held at the Coliseum last month, the Wabash Portland Cement Company's exhibit displayed a distinctive class of ornamental concrete made from their Wabash Portland cement and granite crystals. It demonstrated the adaptability of concrete for ornamental work and beauty and attracted much attention. Architects and others familiar with high-class work were lavish in their praise and frankly declared it to be the best concrete exhibit ever shown because of its perfect uniformity of color and the practicability for use in modern building. In other words, it joined hand in hand beauty and durability.

The Wabash Portland Cement Company is certainly to be complimented for supplying such a pleasing demonstration of the superior merits of its product by furnishing something which was no



CHIEF INSPECTOR BOYNTON, UNIVERSAL
PORTLAND CEMENT CO.

imitation in any sense of the word. More beautiful than stone, distinctive in its class because it can be produced only in concrete form.

This beautiful exhibit was not all the Wabash had in store for their friends. Their booth contained accommodations for surplus wraps which were safely cared for during your stay at the show—plenty of chairs in which to rest—drinking fountain—some of those good cigars the Wabash always has—a few pictures and a neat background of flowers, together with the usual welcome extended by such cordial gentlemen as S. P. Selby, George L. Morris, Geo. O. Harcourt and Dave Spickler, who are all too well known in the cement world to call for further comment.

ROAD EXHIBIT.

The Universal Portland Cement Company of Chicago and Pittsburgh devoted the larger part of its exhibition space at the Fifth Annual Chicago Cement Show to a display demonstrating the use of concrete as a paving material.

A painting in color extended along the back of the five booths used, and showed in perspective the view down a paved street. So realistic was this painting that, in the maze of the Show exhibits and in the blaze of the Coliseum lights, the visitor was tempted to press forward to walk upon the pictured sidewalk. The casual visitor was somewhat disappointed to find that the street was only a painting. He noted the accuracy with which the

actual exhibits of paving were fitted into the picture and felt that he had been cunningly tricked.

But the engineer who had been similarly attracted found the exhibit both educational and interesting. The types of pavement that were shown are just one step in advance of the country good roads movement. They brought out the idea that permanency in pavement is essential to satisfactory road construction, just as it is to city street building. And the question very naturally was raised, Why cannot the pavements that have proven impervious to heavy city traffic be extended into the country, where, under the lighter traffic, they would last a still longer time than in the city?

In the first of the five booths a two-coat concrete pavement was shown. This was composed of a wearing-surface of 1 part cement, 1½ parts of a mix of (3 parts $\frac{1}{4}$ " to $\frac{1}{2}$ " granite, 2 parts granite screenings). The base consisted of one part cement, 3 parts torpedo sand, 5 parts limestone. The expansion joints were protected by Baker steel plates.

In the second booth a brick wearing surface was laid after the recommendation of the National Brick Manufacturers' Association, upon a standard concrete base, such as should be used under all permanent pavements. The base was composed of 1 part cement, 3 parts torpedo sand and 6 parts lime-stone.

In the third booth concrete pavement with a wearing surface of bitumen and sand, such as is used at Ann Arbor, Mich., was laid upon a base composed of 1 part cement, 2 parts torpedo sand, and 4 parts screened gravel. Because of its lightness it would seem that this surface would wear down. However, the experience at Ann Arbor has proven otherwise. And even if worn away the surface can be renewed at low cost.

The fourth booth was a representation of a type of pavement that covers 33 miles of road in Wayne county (Detroit), Michigan. This single-coat concrete pavement is composed of 1 part cement, 1½ parts torpedo sand and 3 parts screened gravel. The expansion joints were placed 25 feet apart, and protected by Baker steel plates. This exhibit proved especially attractive to engineers and highway commissioners generally. The Wayne county pavements have excited country wide interest among good roads men. Not the least interested group of spectators who viewed this exhibit were the Wayne County Road Commissioners themselves, Messrs. Hines, Haggerty and Butler, who looked with approval upon the reproduction of their own handiwork.

The fifth booth showed a pavement with a wearing surface of 1 part cement, 1½ parts of a mix of (3 parts $\frac{1}{4}$ " to $\frac{1}{2}$ " gravel and 2 parts torpedo sand). The base consisted of 1 part cement, 3 parts torpedo sand and 5 parts gravel. The expansion joints in this case were protected by 2 x 2½ x 3-16" angle iron. The reinforcing material used was No. 7 triangle mesh.

The types of pavement shown will, undoubtedly, become the standards for road construction in the future, and are already the accepted standards whenever permanent pavement is desired. The comparatively low cost of these pavements, their small cost of maintenance, their long life, and their ability



W. T. CHOLLAR, CHICAGO, ILL., MANAGER
WESTERN SALES DEPARTMENT, ATLAS P. C. CO.



W. E. DUNN MFG. COMPANY'S EXHIBIT.



EXHIBIT OF THE CHICAGO BELTING COMPANY.



CHICAGO PORTLAND CEMENT COMPANY'S EXHIBIT.

to withstand the heaviest of traffic makes these types desirable despite their somewhat higher initial cost of construction.

Wherever a pavement of any of these types has been laid it has proven uniformly satisfactory. Concrete pavements laid some 16 years ago are still in first class condition, and other similar pavements laid later have withstood exceptionally heavy traffic.

Concrete pavements with concrete wearing surfaces may be laid at a cost of from \$1 to \$1.50 per yard, varying with local conditions, and upon the concrete base shown, various wearing surfaces may be laid which will make the road structure permanent, but which will increase the cost of construction. The engineer is by no means limited as to the choice of surfacing materials. Upon a concrete base he may lay brick, asphalt, wood block or other natural stone block, combinations of granite, or the various bituminous binders. And any one of these surfaces, laid with reasonable care upon a monolithic base, will undoubtedly result in a permanent and satisfactory structure.

UNIQUE WATERPROOFING EXHIBIT.

To illustrate their Integral Waterproofing Compound known as Impervite, the Standard Paint Company has designed a most interesting practical exhibit, which is attracting considerable attention at the Coliseum exhibition.

A brick tank fifteen feet high was built in sections so that the units could be safely transported, and could be erected in the short time available before opening the show. To prevent leakage between the sections a combination of Ru-ber-oid roofing is used and the whole structure drawn together by four heavy tie-rods, exerting a pressure of over 20 tons.

Two sides of each section are left of ordinary brick, while the other two are given a $\frac{1}{4}$ inch external facing of 1:3 mortar containing Impervite. The tank is kept full of water by an electric pump, and shows in a convincing manner the dryness of the Impervite mortar against the continual seepage of the other sides.

This practical test, with its fifteen foot head of water, illustrates to the passerby all the factors of a leaky cellar. It proves also to the engineer that a waterproof mortar facing can be bonded to a wall on the side opposite to the water pressure. In other words, it can be applied on the inside of tunnels, collars, elevator-pits, etc. This sort of work is carried out under guarantee even against the highest pressures, and the method is applicable to old buildings as well as new, since only $\frac{1}{4}$ inch space is taken up by the facing.

Mr. C. L. Jocquel of the Ft. Wayne Cement Stone Company, Ft. Wayne, Ind., was a familiar figure around the cement show at the Coliseum, Chicago. Jocquel's firm secured the contract for furnishing the Wabash Portland Cement Company's exhibit referred to above. On account of the admiration and attention given this exhibit, which was said to be the best and most practical ornamental concrete ever exhibited at the cement show, Mr. Jocquel was kept busy answering inquiries as to the cost of producing such work in various designs. All of which speaks well for the exclusive class of work which they manufacture. Mrs. Jocquel was also in attendance and enjoyed the show very much.

NOTES OF THE SHOW.

Thos. H. Jones, the manager of the Illinois Leather Company, one of the largest producers of



THE UNIVERSAL CRUSHER COMPANY'S EXHIBIT.

plastering hair in the world, was among the distinguished visitors noted at the show.

Of especial interest was the exhibit of the Barrett Mfg. Co., Chicago, Ill., booth 110, in charge of Henry Olmsted, Jr. The products of this company consist of the following: Bridge water proofing on concrete; "Barrett Specification" roof on concrete; "Hydronon" damp-proof paint on concrete or brick; "Tarrok" subfloor over concrete; "Barrett Specification" roof over boards; "Barrett Specification" pitch and felt; "Tartex" felt (for reinforcement).

One of the belt salesmen at the show told a good

story to illustrate the point that a belt doesn't always fit. A lady whose piano was out of tune wrote to the manufacturer and told him to send out a string, giving him a minute description of the same. She was very careful to inform the manufacturer that she expected the string free because the piano was guaranteed. Then, womanlike, she wrote a postscript as follows: "Please see that it is properly tuned, so that my husband can put it on."

W. H. Baker, superintendent of the Atlas' Hannibal (Mo.) plant, came up to be shown.

Henry J. Gerhardt, proprietor of the Bluestone Quarries, Neenah, Wis., was a visitor to the show.

H. F. Geist, Jr., of the Geist Cement Products Company, Denison avenue and West Seventy-third street, Chicago, visited the show.

Charles E. Mateer, executive secretary of the Illinois Association of Municipal Contractors, 805 Strauss building, Chicago, visited the show.

J. H. Lovell, sales agent of the Trussed Concrete Steel Co., of Detroit, was a visitor to the Coliseum one morning. Mr. Lovell is located at 957 People's Gas building, Chicago.

The Eureka Crusher Company, of Cedar Rapids, Iowa, was so rushed with orders two days that they ran out of contract blanks and had to telegraph for more. They sold 14 crushers during the two days.

Lewis Ferguson went down to the stock yards to make some "tank" pictures and other concrete improvements. Yes, it was chilly, and a real Chicago wind was blowing, but he got back with the goods, as usual.

Frank S. Wright, of Meacham & Wright, Chicago, broke away from his office and came down to the show. He enjoyed every minute of it. His host of friends were glad to see him looking hale and hearty.

William H. K. Bennewitz, general sales manager of the McCormick Waterproof Portland Cement Co., was at the show inspecting the exhibits. He remarked upon the beauty and uniformity of the exhibition.

Our friend McCracken, of the Sioux City Cement Machinery Company, says his booth was like a barber shop. People were lined up so waiting to place orders for tile machines, that after one was disposed of he had to shout "Next." The price was not shaved, though.



EXHIBIT OF H. W. JOHNS-MANVILLE COMPANY, OF NEW YORK.

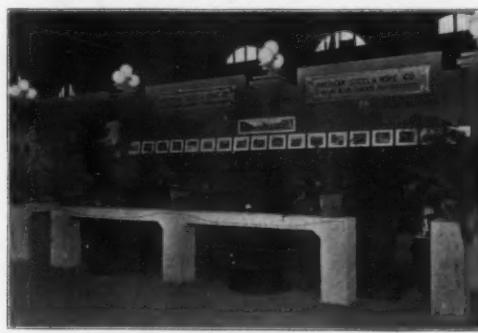


EXHIBIT OF THE AMERICAN STEEL & WIRE COMPANY.



THE BATES VALVE BAG COMPANY'S EXHIBIT.

E. E. Swiney, representing Knapp Bros., manufacturers of metal corner beads, enjoyed meeting his old friends.

B. H. Rader went back to Pittsburgh, leaving Kinney to do the honors of the eastern division of the Universal for the closing scenes of the great show.

W. H. Banningarten, a contractor of Frankfort, Ill., visited the show and said that he picked up quite a bit of information which will be of future use to him.

President L. M. Wing, president of the Wolverine Portland Cement Company, Coldwater, Mich., had expected to visit the show, but was confined to his home by illness.

W. L. Krider, sales manager of the U. S. Gypsum Company, brought his city salesman, W. D. Collins, down to the show one night. They remarked about the admirable display.

"Sammy" Cogan, with his rich Irish brogue, breezed up to ROCK PRODUCTS' booth and said, "I'm here, me bye." Mr. Cogan sells Smith mixers for the T. L. Smith Co., of Chicago.

"Bernie" McNulty, sales manager of the Mitchell Lime Co., says his company is going to install a hydrating plant soon. However, it's a secret as yet, so don't tell anybody.

Al Gallagher came over to inspect a few exhibits which he missed at New York.

The Novo Engine Co., of Lansing, Mich., had a number of their famous engines on exhibition.

W. D. Beers, of Shoemaker & Casparis, New Comerstown, Ohio, was among the prominent Buckeye State representatives.

A man went to the cement pipe booth one night and asked blandly whether cement tobacco was furnished with the pipes.

D. Metterhausen, secretary of the Wallace Supply Company, 108-128 North Jefferson street, Chicago, was among the throng of sightseers, and said that he regarded the exhibits as very interesting.

Jack Palmer, one of the well-known figures at all the previous cement shows, brought out a new machine called the Palmer brick machine. He claims it is a world beater. Jack's many friends wish him every measure of success.

The Jeffrey Manufacturing Co.'s exhibit possessed genuine interest to the man in the business. Their courteous representatives patiently explained the machinery and equipment to the crowd, however. It's all in the game, you know.



JEFFRY MFG. CO. EXHIBIT AT CHICAGO.

Col. C. W. S. Cobb, of the Glencoe Lime & Cement Co. of St. Louis, paid a hurried visit to the show. The colonel was looking as young and handsome as ever.

H. D. Jenkins, the Sandusky Portland's representative, has opened an office in the Chamber of Commerce, Chicago. He was at the show entertaining the visitors.

G. H. Dougherty, secretary and treasurer of the D. and A. Post Mold Co., of Three Rivers, was on the job. He says the outlook for a big spring business is fine.

P. A. Stewart, of the Kickapoo Sand and Gravel Co., and George J. Mattkemper, of the Summit Sand and Gravel Co., both of Attica, Ind., were there looking over the aggregates and other things.

The Standard Scale & Supply Co. occupied booths 207 and 208, where they showed the Standard (formerly Eclipse) low charging concrete mixers, including steam and gasoline mounted outfits, and a small model in operation.

Robert P. Green, of the Champion Stone Quarries of Stone City, Iowa, and the Iowa Stone Co., of Cedar Rapids, Iowa, says the prospects for business in Iowa this year were never brighter. He expressed admiration at the magnitude of the show.

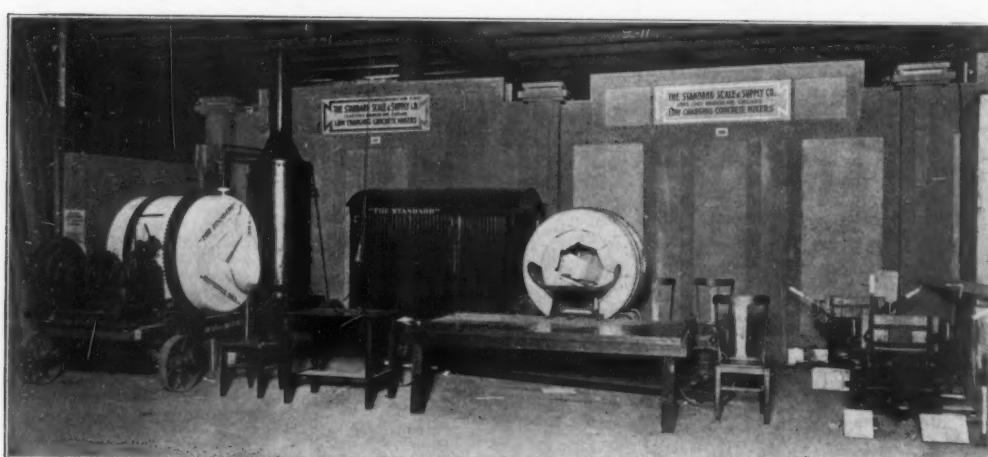


EXHIBIT OF THE STANDARD SCALE & SUPPLY COMPANY IN THE ANNEX.

W. Frank Bradley, of the Ohio & Michigan Sand & Gravel Co., of Toledo, and one of the stalwarts of the National Association of Sand and Gravel Producers, spent one afternoon at the show.

J. A. Green, Jr., of the Iowa Stone Co., of Stone City, Iowa, says that Iowa will have a big year. His company has already booked more orders than they had during the entire year of 1911.

George W. De Smet, one of the best known retailers of building supply specialties, was at the show. George enjoyed it to the utmost, and was pleased with the many handsome exhibits.

Henry Scheele, Jr., of Sheboygan, Wis., the well known concrete contractor, spent an afternoon at the show. Henry is one of the first men in the game and remarked the absence of many of the old timers.

W. A. Plumb, of the Trussed Concrete Steel Co., Detroit, called at the booth of ROCK PRODUCTS during the show. This concern showed its Trus-Con waterproofing and finishing products at the show, and had a very complete exhibit.

The Ottawa Silica Company's exhibit was at booth 114, in charge of F. A. Cebulski. The company is located at Ottawa, Ill., and manufacture white silica sand, washed, dried and screened, for facing cement blocks; also cement bricks, ornamental concrete, exterior stucco, white plaster, etc.

W. A. Alsdorf, state superintendent of the Ohio Good Roads Federation, was a prominent member of the Ohio colony of visitors. Mr. Alsdorf is carrying on a commendable work in his native state in his efforts in the direction of that vital question—in which we are all so much interested—the building of better roadways. His office is 208 Schultz building, Columbus, and he will be greatly pleased to co-operate in any manner with those interested in the campaign he is so ably conducting.

Jacob Urschel was on the job demonstrating his new bag tyer, and was surrounded at all times by a crowd. Jake is president of the Woodville Lime & Cement Company and one of the live wires of Toledo. He is making good with everything he attempts, and his new bag tyer is certainly a winner.

"Glad handing" all the week, the Lehigh boys sought a brief respite Saturday night at the Annex just among themselves. It was a family affair and there were thirty-five of the Lehigh family present at the table. Bert Swett was toastmaster and performed in the manner for which he is famous.

Francis M. Barton, inventor of the spider web system of reinforcing concrete, had a constant crowd of visitors who were interested in his latest improvement, which takes the negative loads over the supporting columns so that it can't get misplaced in the progress of laying concrete. It had all the practical builders going.

Henry E. Grimm, representing the Edgar Allen American Manganese Steel Co., Chicago, who, as everybody knows, carries a sample bar in his hip-pocket, viewed the outlook thus: "Prospects were never better. A great number of the machinery is equipped with our steel." His company is furnishing the gears of the Universal's new plant at Buffington, Ind.

R. H. Thayer, Jr., sales manager of the Bestwall Mfg. Co., First National Bank building, Chicago, was in charge of the booth of his company, No. 247. The company manufactures a gypsum composition plaster board giving a finely finished wall by applying a finishing coat of plaster directly lately been quite busy installing his mills in fertilizer works, mines, etc.



STANDARD PAINT COMPANY'S EXHIBIT AT CHICAGO.

ROCK PRODUCTS

THE HUMAN SIDE.

One of the great hits of the cement show was the series of poems on the front cover of Daily Rock Products contributed by Frank Adams Mitchell, of the Chicago Belting Company. Every one of them was a work of art and the paper was eagerly watched for each day by many for that one feature alone. We reproduce them for the benefit of those who either did not visit the show or who did not get the Daily:

The Hero.

He stands at the booth and he talks away,
From the peep o' dawn to the close of day,
And gives to each of the passers-by
A folder telling the reason why.

His throat gets parched and his brain won't think,
But none ever buys HIM a drink—
Nobody gives him a thought or care
As he earns ALL his salary standing there.



THE SALESMAN.

His legs are stiff and his eyes are set,
And his fevered brow reeks cold with sweat—
He longs for the day when the trumpet's blast
Will give him a harp and crown at last.

You'll find him in every booth you go—
The salesman—the hero of the show.

The Man Behind.

Who is the man that takes all the blame,
Who pockets the loss and feels the shame;
Whose hair grows grayer, as day by day,
Responsibilities block his way;
Whose soul has been touched by the spark divine,
Whose heart is as warm as yours or mine;—
But bearing the brunt of the orders lost,
HE faces the payroll and counts the cost;
When prospects are few and the orders slim,
Where lies the trouble? It's up to him.



THE MAN BEHIND.

He is the man who's awake tonight
Working out plans for the morrow's fight.
His name is in every booth you go—
The manufacturer—behind the show.

The Makers of the Show.

When the great gray doors swing open wide,
Safe from the chilling blast outside,
The swelling throngs come flooding in,
The ceaseless dally rounds begin.
From booth to booth, from aisle to aisle,
Morn, noon and night they slowly file;



THE SHOW'S MAKERS.

The thoughtless ones, on pleasure bent,
With souvenirs alone content;
While some their interest display
By taking circulars away;
And others still, with watchful eye,
Pause thoughtfully, to learn and buy.
From day to day the numbers grow—
The Public—makers of the show.

Association.

The inspiration got by joining hands,
And rubbing elbows with your fellowmen
The recompense of those fraternal bands,
Which once well forged, no strength can part
again;
To meet upon one common plane,
To gauge with mutual point of view,
To see the sunshine through the rain,
And judge together false from true.

The intermingling of the great and small,
Of men of brain, in great and less degree;
Such intercourse, the commoner of all,—
My best I give to you, and you to me.
This, then, I take it, in the main,
Is what association brings;
It joins the valley to the plain,
Unites the great with lesser things.



FRANK ADAMS MITCHELL, CHICAGO BELTING CO.

PINCHED

CHAPTER I.

Sturdy her growth, and true her aim,
Strong her structure, great her name.

—Magiff.

The first cold gray streaks of dawn were shooting a thwart or two across the eastern sky when J. Pierpont Beck awoke with a start.

The telephone was ringing. No, could it be? Possibly it was the bells on the telephone and not the telephone itself.

Who could tell?

Jumping out of bed J. Pierpont Beck discovered that it was the bells that were ringing and not the telephone.

This much was solved.

Aweary from long and arduous hours and worries at the great Coliseum J. Pierpont Beck grabbed the receiver and placed it against his left ear.

Our hero was startled visibly as he heard the voice . . . "This is Buhler. I'm in soak. Come and get me out."

And then all was still.

The first cold gray streaks of dawn were giving place to the second. "Yes, I will," shouted J. Pierpont Beck to himself, and he leaped into his pants. "I will go and get him out."

Our hero was about to leave his room when again the telephone commenced to jingle, and not caring whether it was the telephone or the bells on it that made the noise, J. Pierpont Beck answered the summons. Yes, it was the same voice. "This is Buhler again. Stay in bed. I was only kiddin'."

CHAPTER II.

Born of the fearless pioneer,
Braving the western forests drear.

—Paulson.

It's night. Maybe you do not think so, but it is. It is dark anyway. Two figures fleet softly into the inner office of the great Coliseum and stealthily slam the door.

They are our hero and Harry S. Doyle.

Going to the window and peering out sixteen minutes Harry S. Doyle suddenly shifted to the other foot and turned. He walked to his companion, J. Pierpont Beck, who was seated in one of the real plush chairs of the apartment, and as the light flickered in the fireplace that one could imagine in one end of the room he hissed:

"S-death. S-death again and also once more S-death. I will get him in my power with these," and with a sardonic grin he held aloft a pair of cold gray hand cuffs.

Can you not imagine, dear reader, to whom Harry S. Doyle referred? Can you not see that Edward E. Buhler is in danger?

Wait and we shall see.

CHAPTER III.

Clearing the forest, side by side,
Here they labored and here they died.

—Reiberg.

Edward E. Buhler was in his booth pounding merrily a chunk of sheet steel with an ebeo bar when who should appear but our hero, J. Pierpont Beck.

"Come on, Buhler, let's go up in the balcony and view the show o'er."

Edward E. Buhler was quite overcome by this show of interest and blithely he responded "Bet your neck."

Arm in arm they tripped happily to the balcony while Harry S. Doyle, a dangerous gleam in his left eye watched them climb the stairs.

The two uniformed policemen who were at his side listening and they heard him mutter, "Ahah."

CHAPTER IV.

And upon her he took pity
And sent her back to Kansas City.

—Swett.

It is in the balcony. The air is full of atmosphere and the soft glimmer of the lights is entrancing. Our hero and his guest are seated there viewing the show o'er through the wreaths of blue smoke ascending from their Cremos.

A figure is creeping up the stairs. Slowly and surely it advances.

It is Harry S. Doyle. Behind him are two policemen in uniform. Ever and anon the light strikes their stars and glistens, but the two seated in the balcony gaze on at the show.

Our hero, however, a cunning look in his eye, occasionally steals a look over his left shoulder towards the stairway where the footsteps are heard.

He evidently expects something to happen.

It is really thrilling and exciting, is it not, dear reader? Yes, something is about to happen.

"Do you not think the moon is pale tonight?" asks J. Pierpont Beck as he shifts uneasily in the imitation mahogany chair.

The band is playing and Edward E. Buhler longs

to be back home, back to his metal sheets that he can fairly imagine now dropping on the concrete floor. In his expressive eyes there steals a wistful look as all these things pass in review before his fancy.

CHAPTER V.

Of all sad words by tongue or pen,
There won't be a show for a year again.
—Irvine.

We left Harry S. Doyle and the two policemen coming stealthily up the stairs. As their heads appeared above the wooden rail Harry S. Doyle started back and said to his companions:

"Now, my good men, follow me and never flinch" (business of crouching and sneaking, on the prey).

Harry S. Doyle touched Edward E. Buhler lightly on the arm.

"Iwantchu," he shouted in a whisper.

Edward E. Buhler jumped to his feet gasped and reeled six times. He would have fallen, but our hero caught him.

It was a terrible moment. In that brief instant Edward E. Buhler lived twenty-one years. Scenes of his boyhood flitted in a panorama before his eyes and he seemed to be now back on the farm watching the butterflies make butter or seeing the grass hoppers make grass.

"My gawd," he said, just like that, "What are you doing?"

"I want you, my worthy, come along," and with that Harry S. Doyle slipped a pair of cold steel handcuffs on the wrists of Edward E. Buhler.

"Oh the disgrace, the disgrace. I am a married man and have a wife. Take 'em off—I will do anything, make any reparation, but do not ruin muh."

The party wended its way down the stairs and into the office of our hero.

"This is serious business," said Harry S. Doyle, as he clanked the chains of the handcuffs. Edward E. Buhler's face was the color of stainless white.

"You have been disturbing the band and hammering metal sheets," continued Harry S. Doyle. "You have also smashed some glass."

Edward E. Buhler reeled some more and gasped, "Yes, too true, too true."

"But it might be settled," hinted Harry S. Doyle as he displayed his finely nickled star. And leaning forward he whispered, "It might be settled."

The two uniformed policemen exchanged knowing looks.

There was silence for thirty-seven seconds which was broken by Edward E. Buhler who took a roll of bills from his pocket and said:

"Here is \$10," he said, and he handed it to Harry S. Doyle.

And they lived happily a couple of weeks ever afterward.

One of the attractive features of the Chicago Cement Show was furnished by the Plymouth Vault Company, Plymouth, Wis. It consisted of a little vault manufactured at its Plymouth plant, especially for the show. It was in the exhibit of the National Burial Vault Co., and was surrounded at all times by an interested crowd. The little vault was immersed throughout the show in water to demonstrate its waterproof quality, a feature most desirable in a burial vault. The interior of it was illuminated by an electric light and a doll had been placed inside with a delicate finery that at no time during the show showed the least sign of dampness.

This company is one of the leading manufacturers of this vault in the northwest and is doing much to advance the use of this method of burial.

ADVANTAGES AND DURABILITY OF CEMENT SEWER PIPE.

By Gustave Kaufman, C. E.—Delivered Before Cement Users' Association.

The matter brought out in this paper is based upon the experience gained from the use of concrete sewer pipe in Brooklyn. As is generally known, about 400 miles of such pipe, below 24-inch diameter, have been laid and is in use there. It can be truly said that this pipe has given eminent satisfaction to the authorities and has been maintained at a lower cost per mile than vitrified clay pipe of the highest grade.

Before starting upon the real subject of this paper a description of this pipe and method of its manufacture is here given.

Pipe is made in 6-inch, 9-inch, 12-inch, 15-inch, 18-inch and 24-inch equivalent capacity. The 6-inch and 9-inch are plain round pipe. They are all three feet in length, with hub joint, with the exception of the 6-inch, which is two and one-quarter feet. The 12-inch pipe is round, with flat base, and the 15-inch, 18-inch and 24-inch pipe are egg-shaped, with flat-base. The thickness of the walls are as follows:

6-inch	$\frac{3}{8}$ "
9-inch	$\frac{5}{8}$ "
12-inch	$\frac{1}{2}$ "
15-inch	$\frac{1}{2}$ "
18-inch	$\frac{1}{2}$ "
24-inch	$\frac{1}{2}$ "

The collars are as follows:

6" Collars	$1\frac{1}{2}$ " in depth, with joint of $\frac{1}{8}$ "
9" Collars	$1\frac{1}{2}$ " in depth, with joint of $\frac{1}{8}$ "
12" Collars	$1\frac{1}{2}$ " in depth, with joint of $\frac{1}{8}$ "
15" Collars	$1\frac{1}{2}$ " in depth, with joint of $\frac{1}{8}$ "
18" Collars	$1\frac{1}{2}$ " in depth, with joint of $\frac{1}{8}$ "
24" Collars	$1\frac{1}{2}$ " in depth, with joint of $\frac{1}{4}$ "

This cement pipe up to 1890 was made by hand, when pipe made by machine was introduced by the Wilson & Baillie Manufacturing Company. With the hand made pipe it was always difficult to thoroughly mix the ingredients of the concrete unless the workmen were closely watched, and frequently resulted in a pipe far from homogeneous and of equal density throughout. In the manufacture of the machine-made pipe the cement sand and trap rock are measured and thoroughly mixed in the machine mixer, evenly fed to the molds, and rammed by machinery with iron rammers regulated to produce continuous and uniform blows of any impact desired. The result is a product perfectly homogeneous and of equal and great density throughout.

The machine used for manufacturing the pipe consists of a mechanical tamper and a revolving table upon which the molds are placed. The tampers have a vertical reciprocating motion and at the same time move outward and inward rapidly so as to conform to the line of the travel of the mold, which, owing to its oval form, presents, at each revolution, varying diameters to the successive tamping bars. There are eight tampers, made of the best tool steel, running two hundred tamper minutes each. Only one rammer is down at a time. The head, which consists of the actuating machinery for the tampers, is counter-balanced upwards as the mold is being filled with concrete. The head is raised by the density of the concrete and in this way an even and regular product is obtained which is impossible to achieve by hand. The force of the blow of each rammer is estimated at eight hundred pounds. The area of the arm of the rammer is about one inch square.

The proportions, which have been used in later years, are one and one-half parts of the best grade of Portland cement, one part of sand and three parts of trap rock screenings, containing twenty per cent of stone dust. The percentage of water used to the whole bulk varies from ten per cent to fifteen per cent, according to the condition of the ballast. The mix, when dumped on the floor, is apparently dry, but will ball in the hand with some pressure. An extra mix is used in forming the collar for the reason that as the rammers do not exert a direct blow on the material in the offset compression of the material must be depended upon.

The mixed concrete is delivered to the machines in barrows and is fed into the hoppers by two men, one on each side. As soon as the flask is full, and the core automatically lifted clear, the flask is taken up by a pipe truck and wheeled into the stripping room where it is allowed to stand usually thirty minutes, when it is stripped. After the pipe has set over night a spray of water is turned on and the pipe kept damp until at the expiration of six days when they are removed from under cover and placed in a yard. The pipe, at the expiration of thirty days, is set sufficiently to be handled in the work.

Spurs for house connections are connected on the pipe. A hole is cut at the proper point on the side of the pipe and a mold is placed in the interior. Cement mortar is then spread over the mold and the connection piece is bedded in place and a heavy band of mortar is wiped around the joint on the outside. After the mortar is removed the inside joint is finished with a trowel. This method has been found to be entirely satisfactory. The main advantages of cement or concrete pipe, over vitrified pipe, are:

First—They can be constructed so as to give them an oval or egg-shape.

Second—They can be made with practically no variation in size.

Third—They can be constructed with a flat, broad and level base.

Fourth—The joints can be made so that the pipe is self-centering and so that the joints will fit so closely that a continuous smooth bore can be obtained.

Fifth—They can be made in many localities where the cost of vitrified pipe is prohibitive.

Oval or egg-shaped pipe is very desirable where the flow of sewerage is variable and where the gradient is very slight. The small invert will permit the flow of small quantities of sewerage with minimum friction on account of the wetted perimeter being less than in the circular pipe.

Pipe of such shape is thoroughly self-scouring whenever there is an increase in the flow of the sewerage and besides will effect a decided saving in flushing water. Pipe of this shape cannot be made of vitrified clay, due to the warping in burning.

In the transactions of the American Society of Civil Engineers, June, 1911, Mr. George T. Hammond of Brooklyn, while discussing the paper on Monterey Water Works and Sewerage, strongly advocated the use of egg-shaped pipe, even as small as 8" in diameter. In the Monterey system, 8" vitrified pipe was used, but its capacity was much greater than necessary at present. Mr. Hammond says:

"The writer's experience with concrete pipe, derived mainly from a long service in sewer design and construction in Brooklyn, N. Y., leads him to believe that at Monterey the whole sewer system might, with advantage, have been built with concrete pipe, using an egg-shaped pipe with an area slightly larger than an 8" circle designed for a discharge equal to an 8" pipe for all the smaller sewers. The invert of such an egg-shaped pipe would fulfill the present requirements in carrying a very small flow with good flotation depth, better than would a 6" circular pipe, and the reserved capacity of the 8" pipe would be secured without interfering with good present service. Egg-shaped pipes, similar to those used in Brooklyn, the writer believes, would have given far better satisfaction throughout the Monterey sewerage system than circular fire-clay pipe, and would have cost no more, but probably less. The egg-shaped pipe referred to is made with a flat base and a self-centering joint, thus insuring perfect alignment, and a smoother interior surface than can be obtained with fire-clay pipes."

Cement pipe, in curing, retains accurately the shape given to them by the molds. Vitrified clay pipe, especially in sizes from 15" and up, are considerably warped, due to the burning.

In Brooklyn and many parts of Europe concrete sewer pipe is molded with a flat level base. Such a base permits the pipe to rest on a flat foundation, either earth or plank, and thus permits of better back filling. Improper back filling is the cause of much breakage in circular pipe, not supplied with a flat base.

The joints of cement pipe should be so designed that the hub and socket will accurately center themselves. This can be done in cement pipe by making the socket with slightly flaring ends, thus causing the hub, when

driven home, to come to its proper position. The vitrified pipe, on account of the warping in burning, must have wide sockets. Such wide sockets are the cause of the off-setting at each joint wherever they are laid. These jogs, or off-sets, collect solid matter in a sewer, and of course retard the flow very much. When small openings are used, such as can be made with cement pipe, this difficulty is entirely eliminated and a close and smooth joint is the result. In many places no cement at all is required in the joint as the sift in the sewage quickly fills up the small opening.

In many sections of the country vitrified pipe can only be shipped at great expense, and, wherever, under such conditions, concrete materials can be obtained, it is far cheaper to make sewer pipe of cement. In many places of Europe, where there are no clay deposits, concrete sewer pipe has been used for years without any question whatever as to its suitability for sewer purposes.

Durability. In 1887, when Julius W. Adams past-president of the American Society of Civil Engineers, was chief engineer of the city of Brooklyn, there was a proposal made that the use of earthenware pipe should be resumed. This proposal was adversely reported upon by Mr. Adams. The following are some quotations from this report:

"Last winter there were careful inspections made of our pipe sewers. In one subdivision the grades of streets are over two and one-half feet to the one hundred, and special examination was made of the pipe in this subdivision. There is no sign of disintegration or wearing away of the cement pipe. This pipe has been laid over five years. On the 25th of March 1873, this department took up a cement pipe that had been laid in Fleet street in the year 1861, and the pipe was found in every particular, as good as when laid."

"The fact remains, however, that the renewals of sewer pipe in Brooklyn, on account of breakage or collapse, has been relatively less in the case of concrete than in that of earthenware pipe."

Since the above was written, many more miles of cement pipe have been laid, and as stated earlier in this paper over 400 miles of cement pipe are in use in Brooklyn. The experience of Mr. Adams has been confirmed since that time. The cost of maintaining concrete sewer pipe has been proven to be less than that of vitrified pipe. This includes renewals due to breakage action of acids and so on. It might be of interest to note that a few years ago, during the construction of the subway in Fulton street, Brooklyn, referred to by Mr. Adams, was taken up and was found that it would be still good for a long time. The sewer was then about 50 years old. A few lengths of this pipe are in our possession. It is manufactured of natural cement, Cow Bay sand and gravel.

The main argument against the use of concrete pipe is that it cannot withstand the effect of sewerage, nor resist the action of acids. In Brooklyn but two cases have been called to our attention where there has been a failure of cement pipe, due to concentrated acids being admitted in the sewers. Inasmuch as such sewers have been in existence for so many years, the percentage destroyed is entirely negligible. The author desires, at this point, to make the statement, as an engineer, that if it is desirable to install a sewer which is to take concentrated acid discharged from manufacturing concern, he would not advocate the use of cement pipe; but would suggest for such conditions vitrified pipe of the best quality, with joints of some asphaltic or acid resisting nature and that manholes be built of some other material than brick, laid in cement, because strong acids effect not only cement, but bricks. It seems to be folly to dwell upon such a contingency. No manufacturer is going to be so extravagant as to permit highly concentrated acids to be wasted. They are too valuable.

Mr. Adams, in his report of 1877, says:

"There has been considerable written about the acids acting injuriously upon cement pipe, but these acids in sewerage matter are greatly diluted, and I am convinced by the experience in this city that they will seldom destroy a good cement pipe. We have known of no case in this city where the street sewer has been disintegrated or eaten away by sewer acids or gases."

Mr. A. J. Provost, in "Municipal Journal and Engineer," Vol. 20, Page 388, says:

"The argument advanced against concrete sewers is still confined to possible disintegration by acids. The fact remains, however, that the renewals of sewer pipe in Brooklyn on account of breakage or collapse have been relatively less in the case of concrete than in that of earthenware pipe."

Mr. Rudolph Hering, consulting engineer, in a report dated February 15, 1909, to Honorable Bird S. Coler, president of the Borough of Brooklyn, says:

"Portland cement used for the manufacture of concrete pipes is attacked by certain strong acids, such as sulphuric acid, which converts the carbonate into sulphate of lime, otherwise called gypsum, which is comparatively soft and easily eroded. Therefore, cement pipe cannot be used where strong acids are known to enter the sewers."

"Vitrified pipe will stand the effect of most acids. When the joints are made of cement these will, of course, be acted upon by acids as readily as the cement pipes."

"It should be added that the acid question should be viewed in a reasonable light. When the dilution of sewerage is sufficient the discharge of a small amount of even strong acid will not cause objectionable effects, as evidenced by European cities where the use of concrete sewers is almost exclusive in some cities, as Paris and Vienna. In England concrete sewers are also very common. Strong acids attack not only cement, but bricks. Yet bricks are extensively used both in America and Europe for building large sewers, where naturally any acid would be very dilute."

"The greasy substance where is usually found to coat the perimeter of a sewer under the waterline tends to protect the cement from the action of acids to some extent."

"It should be added that just as it is objectionable to discharge exhaust steam into sewers and the waste from gas works, which many cities prohibit, so it should be prohibited to discharge strong acid waste into the same."

The Joint Committee on Concrete and Reinforced Concrete of the American Society of Civil Engineers, American Society for Testing Materials, American Railroad Engineering and Maintenance of Way Association, and the Association of American Portland Cement Manufacturers, in its report presented at the annual meeting of the American Society of Civil Engineers, January 26, 1909, says:

"Concrete of first-class quality, thoroughly hardened, is affected appreciably only by strong acids which seriously injure other materials. A substance like manure, because of the acid in its composition, is injurious to green concrete, but after the concrete has thoroughly hardened, it satisfactorily resists such action."

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MARCH 22, 1912

ROCK PRODUCTS

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GREAT MEETING OF THE N. A. C. U.

Eighth Annual Convention of the Association at Kansas City in Connection With the Cement Show the Most Important Event Ever Held By That Organization.

The Eighth Annual Convention of the National Association of Cement Users was opened Monday evening, March 11, in the banquet hall of the Baltimore Hotel, Kansas City, with a creditable number present. Owing to a misunderstanding on the part of Mayor Brown, who thought the convention was to open Thursday, he did not appear, but he came to the convention Wednesday and welcomed the visitors.

This convention is regarded as the most important and the most fruitful of results that the Association has held, and President Richard L. Humphrey has been congratulated on all sides for the success that has attended his efforts.

In the absence of Mayor Brown Monday evening a welcome was extended on the part of the engineering fraternity of Kansas City, by J. L. Harrington, Past President of the Engineers' Club.

Mr. Harrington spoke at some length on the origin and development of the association idea. Formerly, he said, it was the practice to guard jealously the secrets of trade processes so that the individual could keep all the benefits for himself. In many establishments even up to this day it is dangerous for the employee to ask too many questions. Early in the last century the civil engineers of Great Britain formed an institute to disseminate information. The other interests formed similar organizations and the idea grew apace. The National Association of Cement Users he said, is only the development of that idea, and now it has come to occupy a leading position in the cement industry, for the spreading of information concerning the craft. He said that only 20 years ago Congress, in discussing the tariff, gravely questioned the existence of materials in this country for the making of cement that would justify the placing of duty on foreign cements to protect them. Yet last year 70,000,000 barrels were manufactured and consumed in the United States. It is meet, he said, for men who are handling the cement for structures worth half a billion a year to get together and talk over matters for their improvement. It is our duty, he said, to learn as much from our failures as from our successes. Wilful foolhardy risks should be avoided and bad construction should be exposed. It was the duty of all to remember that concrete is limited in its proper use and this fact should be remembered. Some of the things to be guarded against were the too early removal of forms, careless placing of reinforcement, careless form construction and handling of materials and ignorant labor. Concrete, he said, is peculiar to itself and it is a mistake to try to make it represent something else. He called attention to the old Spanish structures which are in a class by themselves. Much has been done, he said, in the line of improving surfaces, but much still remains to be done.

The continued increase in the use of concrete is assured, he said, because of the enormous fire losses, which are a national disgrace. The high standing and ability of concrete construction engineers gave much to hope for, and it was a pleasure to him to welcome the convention on behalf of the engineers of Kansas City.

President Humphrey said the address sounded the keynote of the convention, and the applause certainly indicated that such was the case.

F. W. Pratt, President of the Union Bridge and Terminal Railroad Company of Kansas City, welcomed the visitors on behalf of the concrete interests. He said:

"Mr. President and Gentlemen:—It devolves upon me to extend to the members of this Association and attendees of this convention a greeting and welcome on behalf of the concrete interests of Kansas City. I suppose this really means manufacturers, dealers and contractors, but for the moment I shall presume to include the users also. Thus the concrete interests are not a few of the people, but all of the people, for who is there today that is not interested in concrete in some form?"

"Most of us, more than twenty years of age, can well remember the almost universal wooden sidewalks, or no sidewalks at all; how slivers would get into the soles of our shoes; how nails would work up and stub our toes; how loose planks would trip us, or bark our shins."

"If in no other of the countless ways concrete is used are we interested, we all walk, ride or are carried on concrete walks, and so we, all the people, the oldest, the youngest, and in every stage of life between them, are qualified most heartily to welcome you, and extend our best wishes for the welfare and success of those who are promoting one of the most useful products that has to do with the convenience and comfort of mankind."

"Looking back a little, and not so far back of those twenty years, we come to the saddle and stage coach, as the means of travel that had prevailed without material

improvement since the earliest times. Many of us remember the days of the local grist mill, when most of our population was rural, and the boys went to mill with the grist in a sack balanced over the shoulders of his horse; when the farmer cut hay with a scythe, harvested his grain with a cradle and threshed it with a flail on the barn floor, while his horses grew fat in idleness. Those were indeed days of hard human toil, that have given away before the onward march of science and invention.

"What of all the things about us, that enter into our daily lives, have not been created or vastly improved during our own time, and among them all, what one thing is more recent or has advanced with more rapid strides than the cement industry?

"No one man has brought this about, because the age of conspicuous invention by an individual has largely passed. We will have few more Newtons, Watts, Fultons, Howes or McCormicks who stand out conspicuously as a discoverer of a single principle. The rapid change of our time, that produce so many great things, come because study is specialized and workers are multiplied. Thus the wonderful, and even phenomenal, advance of the use of cement in all works of utility and art, is because so many people are bending their efforts towards producing a most practical and useful commodity, resulting in a process of evolution in which many are taking part.

"This is not saying that there will be no more great inventions, great they may be and will be, but in the multiplicity of new things that are being brought out individuality is effaced and each effort becomes a part only of a general development. During the first year the United States patent office was opened three patents only were issued. Yet about 100 years later, in 1910, the number was over 35,000, indicating the vast range of search for new things at the present time.



RICHARD L. HUMPHREY, RE-ELECTED PRESIDENT OF, N. A. C. U.

"Another condition of our times is the disposition to co-operate and combine in the exchange of knowledge and ideas. Every trade, profession or line of manufacture, has its association. I believe one or more conventions are held in this city every week in the year, and the same is true of many other cities. Last week the Land Show was going on, and people were here from all over the United States, and even foreign countries, to find out what they could about what others are doing in the land business. The exhibits covered the uses and improvements of every kind and character that go to making our land more useful and valuable. The implement dealers and ice men held their conventions about the same time, and now we have in our great convention hall the Cement Show, where everything that can be made from cement, or used in connection with it, is shown or represented, and while that cement show is on this National Association of Cement Users most properly holds its annual convention at the same time in the same city.

"Personally I have not known much about this association, but on looking over its program I see laid out for consideration during the week it is in session an excellent, brave array of subjects for discussion by prominent men from all over the country."

"All this exchanging of ideas, and finding out what the other fellows are doing, stands for progress and rapid development, that will bring new inventions and comforts into our lives, that might be delayed for generations if left to individual effort."

"We are told that the manufacture of cement and its application to the arts is still in its infancy. To attempt to tell what has been done, or to predict what may be accomplished, would make too long a tale to recite here, and that must be left for your imaginations and the discussions that will take place during the convention."

"You have been offered the freedom and privilege of the city. It is the part of those representing the concrete interests to assist you in taking advantage of that offer. We want to become personally acquainted with all of our visitors, exchange ideas with them, show them the city and particular points of interest. We want you to find such knowledge as you are seeking, such pleasures as you may wish for, and when you return to your homes we want you to carry good words for our city, kind words for our citizens and pronounce the convention of 1912 an unqualified success."

President Humphrey then named the following committees.

Resolution Committee.

- E. P. Miller, Chairman, New York.
P. H. Bates, Pittsburgh, Pa.
Alan W. Brett, New York.
F. L. Williamson, Kansas City, Mo.
P. H. Wilson, Philadelphia, Pa.

Nominating Committee.

- J. Moore, Chairman, New York.
John L. Conzelman, St. Louis, Mo.
B. F. Lippold, Chicago, Ill.
D. A. Abrams, Ames, Iowa.
L. T. Sunderland, Kansas City, Mo.

Dr. Walter M. Cross, city chemist of Kansas City, then described how concrete was employed in the building of the Kansas City hypochlorite water purification works. It was an interesting paper and admirably presented. The installation was the result of the presence in the drinking water of disease germs, and the purification has resulted in reducing the typhoid cases from 107 deaths and 2,000 cases the year before to 61 deaths and 800 cases the year after the installation. Reinforced concrete was used in the plant because any other material would be deteriorated by the chemicals employed.

The session was closed by an illustrated paper presented by George E. Tebbetts, Engineer of the Kansas City Terminal Railroad Company, who described the use of concrete in building the new terminal station. He also showed illustrations of the unit system of concrete construction which he originated while in the engineering department of the Burlington System.

TUESDAY MORNING SESSION.

The sessions commencing today were held in the New Casino, President Humphrey thinking that more room would be available there.

The report of the committee on specifications and methods of tests for concrete materials, was presented by C. W. Chapman of New York. It will be published later.

William M. Kinney, Assistant Inspecting Engineer of the Universal Portland Cement Company, Pittsburgh, presented a paper of great interest on aggregates. The paper was illustrated by views showing the foot of an abutment that had disintegrated because of poor aggregates. Another view showed the ground bank from which the material was taken, revealing strata of clay and silt that had been used in the concrete. Samples, however, taken from the clear gravel of the bank when the work was let, had received none of the clay.

The report of the committee on measuring concrete was read by Edward D. Boyer, and will be incorporated in the proceedings.

TUESDAY EVENING SESSION.

The attendance was large at this session in anticipation of President Humphrey's address describing his trip abroad, when he inspected numerous examples of concrete construction. He showed slides illustrating many interesting forms of construction seen on the trip, including railway ties as used in Italy, water tanks, streets, pavements, and many other types of structures. The address was a revelation of what is being done in Europe. He said the European cement users

are much interested in this association and have adopted many of its ideas.

L. C. Wason, of the committee on treatment of cement surfaces, reported and farther progress will be brought out before convention adjourns.

F. J. Morse of Heath & Milligan, presented a paper on Cement Coatings, a subject in which all are interested. He drew a distinction between cement paint, so called, and cement coating, a paint being distinguished by the use of linseed oil as a vehicle, whereas in cement coatings another vehicle is used. The paper aroused some discussion, which was participated in by C. W. Boynton, President Humphrey and Edward D. Boyer.

WEDNESDAY MORNING SESSION.

The day was given up pretty much to technical subjects, being opened by A. E. Lindau with a report on reinforced concrete and building laws. Then followed a paper on "The Testing of Reinforced Concrete Buildings Under Load," by Prof. Arthur N. Talbot of the University of Illinois. He described the instrumental testing of the Wenallden building in Chicago and the Turner-Carter building in Brooklyn. The paper was accompanied with numerous slides showing figures and data on the tests.

President Humphrey then read the report of the Board of Directors on the work of the year and giving suggestions and recommendations for the future of the association.

Election of Officers.

The nominating committee reported the following list of officers and they were elected unanimously, the choice being a re-election in each case: Richard L. Humphrey, president, Philadelphia, Pa.; Edward D. Boyer, first vice-president, New York, N. Y.; Arthur N. Talbot, second vice-president, Urbana, Ill.; E. S. Larned, third vice-president, Boston, Mass.; Ira H. Woolson, fourth vice-president, New York, N. Y.; Edward E. Krauss, secretary, Philadelphia, Pa.; H. C. Turner, treasurer, New York, N. Y.

WEDNESDAY AFTERNOON SESSION.

In the afternoon the attendance was good. The program was opened by A. E. Lindau, who read a paper by F. J. Trelease of the Corrugated Bar Company, on "Design of Concrete Flat Slabs." The paper was accompanied by pictures representing the methods employed in determining the design.

W. A. Slater, Assistant Professor, University of Illinois, read a paper on the methods of testing concrete, which was technical in character.

The session was closed by a paper presented by James L. Darnell, Manager of the Unit Construction Company of Kansas City, in which he showed examples of that form of construction.

WEDNESDAY EVENING SESSION.

Mayor Brown was present on this occasion and addressed the convention as follows:

Address of Mayor Brown.

"Mr. President and Gentlemen of the Association: As has been intimated to you by your president, my coming here tonight is attended with some embarrassment, especially because of the fact that the president paid me a personal visit some time ago and extended to me an invitation to appear at the opening session of your association; but at the present time there is a little political contest on and matters are in some sort of confusion, and the secretary in my office disagreed with me as to the date, saying that he had received information that this convention was to begin at Convention Hall on Thursday evening at 8:00 p. m.

"Somehow or other I have always had a sort of antipathy against the old stereotyped custom of the mayor or some high dignitary of the city or community being called upon to extend an invitation to any considerable body of citizens from other parts of the country who might assemble in that community for any purpose. I suppose that old custom came down from the Middle Ages, when the people of every community had their hands on the throats of the people of every other community, and they built great walls around the city, and before any man could get inside it was necessary for him to knock on the door and let some great official come with the key and let him in. But it seems to me that in this great country of ours, where we have been brought so close together by the telegraph and the telephone and the United States mail and by all the means of communication, it is somewhat of a farce to for one moment intimate that any citizen of the United States ought to have any welcome extended to him in any part of this great country. And so for this reason it seems to me that it is a sort of a custom, and it is simply, I apprehend, that these addresses of welcome be put on the program, simply to follow out that custom and make it a sort of a program."

"But at any rate, I am glad of the opportunity to appear before you and express my appreciation of the fact that men should gather together in this city for the purpose of discussing the matters which have brought you here. We have heard about the Wooden Age and

the iron Age and the Stone Age, and I think it is the consensus of opinion that we are now in the Concrete Age, and that all of the improved structures are coming to be made of that sort of material. We are also in an age of progress and advancement; we are in an age when people have adopted the idea that if a thing is worth doing at all it is worth doing well; and that is the reason why in every branch of human industry, in business, in commerce, in the sciences and in the professions, they gather together periodically for the purpose of discussing the ways and means of better doing the business in which they are engaged.

"And so I am glad that you have come here, because I am satisfied that the result of your deliberations will not only be of benefit to you in your particular business, but will be of benefit to the community in which you live and benefit to the American people as a whole. And so I am extremely glad that you have come here and I hope that your deliberations will result in great benefit and that one of the results of your deliberations will be that the use of this material will become so perfected that it will not only give us more comfortable buildings and better and more ornamental structures, but will decrease the cost of those materials to the people; because that is one of the great problems that must be solved. And so in behalf of the people of Kansas City I want to extend to you a very cordial welcome and trust that you will not only be benefited by your deliberations, but that you will have some pleasure in your stay in our city. I thank you."

E. Lee Heidenreich, Chief Engineer of the Builders' Material Supply Company, presented an interesting paper on the design of concrete grain elevators.

The consideration of the report of the committee on Treatment of Concrete Surfaces was deferred until the annual meeting.

President Humphrey then read the paper of Dr. S. J. Trauer, City Building Engineer, Breslau,



EDWARD D. BOYER, FIRST VICE PRESIDENT NATIONAL ASSOCIATION CEMENT USERS.

Germany, who was unable to be present, on The Design and Construction of a Reinforced Concrete Dome, 220 Foot Span. This was illustrated with stereopticon views. This is not only the largest concrete dome in the world, but presents many unique features in its construction.

President Humphrey then read the paper of Herbert W. Alrich, Engineer, Consolidated Gas Company, New York City. A discussion followed.

Secretary Edward E. Krauss, read a translation made by himself of Fritz E. von Emperger's paper on the Necessity of Field Tests for Concrete, illustrated by stereopticon views, which were explained.

THURSDAY MORNING SESSION.

Concrete bridges was the order today. The first paper was by Walter Scott Greenhart, State Highway Engineer, Manhattan, Kansas, who showed extremely interesting pictures of bad bridges of various kinds, followed by examples of flat top bridges suitable for his state. He declared that the matter of good bridges was more important than good roads, for without good bridges, roads could not be used at all. His talk was full of life and interest and was one of the hits of the convention.

He was followed by Daniel B. Luten, Consulting Engineer of Indianapolis, Ind., whose subject was "Concrete Bridges." He described the proper construction of bridges, giving preference to the arch form of construction.

THURSDAY EVENING SESSION.

The subject of this session engaging the attention of all was concrete roadways.

F. P. Wilson, City Engineer of Mason City, Iowa, whose work has attracted world wide attention, presented a description of the methods employed in his work. His paper was as follows:

CEMENT PAVING AS CONSTRUCTED AT MASON CITY, IOWA

By F. P. Wilson, City Engineer.

"I have endeavored to describe in this paper to this Association my experience, also methods, I have used to construct first-class Portland cement concrete pavements in Mason City, Iowa.

"The past five or six years I have made a broad study of cement paving and have visited a large number of cities in the northern states where this class of pavement has been laid, and I watched the methods of construction in detail for this class of pavements.

"It is my opinion that a Portland cement concrete pavement, properly laid in an up-to-date manner with first-class cement, good, clean, sharp sand, and good, clean, hard stone, with proper allowance made for expansion and contraction, certainly warrants the use of the same on account of its first cost, cheapness to maintain, the cleanliness of the streets, and the small expense to repair when it becomes necessary to cut holes.

"During the summer of 1909 the city of Mason City, Iowa, laid six thousand square yards of cement paving in the down town district, where it would have a test under the most severe traffic. At this time, after standing the severe test of two winters and heavy traffic, also the cold of this winter to date, is, at this time, in as good condition as the day it was finished.

"During the year 1910 twenty-two thousand square yards were laid. The past season forty-five thousand square yards were laid, and at this writing contracts have been let for fifty thousand square yards which this city expects to have laid this coming summer. A total of seven thousand square yards has been laid in Mason City, Iowa, to date at a total cost of \$114,378.96, including the cement curbing.

"In constructing a first-class cement pavement, the first requirement is to have strictly first-class material; secondly, to have a first-class, up-to-date set of plans and specifications, and, lastly, a rigid and close following of these specifications for Portland cement concrete pavement which I have used in the construction of all concrete paving laid in Mason City, Iowa, which has proven entirely satisfactory.

PREPARATION OF ROADBED.

"All streets, prior to laying any pavement thereon, shall be graded that the pavements will be at the established grade when completed. After excavating to sub-grade, unless the engineer deems the natural ground a proper foundation, excavation shall be continued until solid ground is reached, and then refilled on sub-grade with sand, gravel or broken stone.

"The contractor shall be required to remove at his own expense all obstructions, such as trees, old blocks, debris, etc.

EXCAVATION.

"All excavated material, gutter stones, planks, macadam, crossing stones, old curbs, surplus earth, etc., shall be the property of the city and be deposited by the contractor in such place and manner as shall be directed by the engineer, the distance not to exceed three thousand feet. No plowing will be allowed within three inches of the bottom of the foundation.

ROLLING.

"When the street shall have been graded and shaped to its proper form, it shall be thoroughly rolled with ten-ton roller to a thoroughly compact surface. If the ground is wet, sand or gravel is to be put in before rolling.

"Any depression discovered after this rolling shall be refilled to sub-grade, re-rolled, and this repeated until a roadbed, perfect as to grade and form, shall have been made.

TAMPING.

"When the use of the roller is impracticable, the foundation must be thoroughly puddled and rammed until completed to the satisfaction of the engineer.

CONCRETE FOUNDATION.

"Upon the roadway thus formed will be laid Portland Cement Concrete five inches thick, to be made as follows: One part by measure of Portland Cement, two parts by measure of clean, sharp sand, and five parts by measure of broken stone.

"The sand and cement shall be thoroughly mixed into mortar at the proper consistency with a batch mixer approved by the engineer. Broken stone, thoroughly cleaned of dirt, drenched with water, but containing no loose water in the heap, shall then be added to the mortar in the proper proportion. The concrete will then be turned and mixed until each fragment is thoroughly coated with mortar, a strictly wet mixture being required. The concrete thus mixed shall have such a consistency that when rammed the mass will not shake like jelly, but will, when struck, compact within the area of the face of the hammer without displacing the material latterly.

"The concrete thus prepared shall be placed immediately in the work. It shall be spread and thoroughly compacted until free water appears on the surface, which shall be made smooth and parallel to the surface of the finished pavement. The whole operation of mixing and laying each batch of concrete shall be performed in an expeditious and workmanlike manner and be entirely completed before the cement has begun to set.

"No retarding of concrete will be permitted, and concrete in which the mortar has begun to set will be rejected.

"The thickness of this concrete to be five inches after the same has been compacted.

"Extreme care should be taken that the sub-grade is kept moist while this concrete is being put in place.

"No concrete shall be laid when the temperature at any time during the day or night falls below thirty-five degrees above zero, Fahrenheit.

WEARING SURFACE.

"Upon the concrete heretofore specified shall be immediately laid a wearing surface two inches in thickness, to be made as follows: One part by measure of Portland Cement, two parts by measure of coarse, clean, sharp sand; the sand and cement shall be thoroughly mixed into mortar of the proper consistency with a batch mixer approved by the engineer.

"The mortar thus mixed will be immediately laid upon the concrete heretofore specified."

"Before this mortar has begun to set it will be finished off to a smooth surface with a wood float, and, before completely hardened, it shall be roughened by brushing with a stiff vegetable brush or broom."

"The curvature and cross sections of the pavement to be made according to the plans governing the same."

REQUIREMENTS OF MATERIALS.

"The cement used in the work will be submitted to the tests approved and recommended by the American Society of Civil Engineers, which it must stand to the satisfaction of the engineer."

"All Portland Cement used in the work shall be Mason City Portland Cement or other Portland Cement equally as good, which shall be protected from the weather, free from exposure to air slackening and from moisture until used."

"The sand shall be clean, sharp sand."

"The stone used for the concrete shall be of the best quality of hard limestone or other stone equally as good, and shall be broken to such a size that the fragments shall not be larger than will pass through a one and one-half inch ring and not smaller than hazel nut. It shall be free from dust, dirt, loam or other objectionable material and shall be screened, when necessary, over a one-half inch screen to eliminate dust and small particles."

EXPANSION JOINTS.

"An expansion joint one inch in width shall be left next to the curb on each side of the street or alley, also an expansion joint one-half inch in width will be left every twenty-five feet across said pavement at right angles to the curbs. Said expansion joints are to be filled with an asphalt paving filler of proper quality and consistency approved by the engineer. It will be applied while heated to a temperature of about four hundred degrees Fahrenheit, and shall be so applied that said expansion joints shall be thoroughly filled clear to the top of the surface of said pavement."

"All forms for expansion and contraction joints shall be made of iron or steel in the form of a template, out to the desired shape of the street according to the plans, and of sufficient strength to resist springing out of shape. All metal and dirt shall be removed from forms that have been previously used. The forms shall be well staked to the established lines and grades."

CONTRACTION JOINTS.

"Contraction joints shall be made entirely through the pavement every twelve and one-half feet at right angles with the street."

"The edges of all expansion and contraction joints shall be rounded to a radius of about one-half inch with proper tools."

"Care shall be taken to obtain a surface free from ridges, at expansion or contraction joints, and depressions or unevenness in the surface, that will detract from its appearance, or cause water to lay on the pavement."

"Any section having such inferior surface will be rejected and shall be rebuilt by the contractor at his own expense."

"Care shall be taken to make the expansion joints in such a manner that they are practically the same width throughout their depth."

"Extreme care must be exercised in removing templates or divisions used to make expansion or contraction joints; the breaking out of any portion of the pavement in removing such templates and forms will not be tolerated and such damaged portions of the work shall be torn out and replaced in good condition by the contractor at his expense."

"The contractor shall keep pavement sprinkled for one week after it is laid, or longer if deemed necessary by the engineer."

"The contractor shall keep the streets barricaded where pavement has been laid at least two weeks after the completion of the same."

"The above specification was followed very closely in every detail."

"In this work thirty thousand barrels of Mason City Portland Cement were used. From every car ten samples were taken, tests were made for fineness, tensile strength, and specific gravity; also boiling tests were made."

"In the construction of this work a mechanical batch mixer with a twenty-five-foot boom, with a traveler on the same was used. The mixer is manufactured by the Koehring Company, of Milwaukee."

"After the sub-grade had been thoroughly rotted the material was distributed along the street, the rock on one side and the sand on the other. The mechanical mixer was set up at the end of the street twenty-five feet from the place of beginning. In the first section, twelve and one-half feet by thirty feet, the concrete was placed. Immediately the wearing surface was placed upon the concrete, not to exceed twenty minutes elapsing between the time the concrete was placed and the wearing surface was put on the same. Then following the next section of twelve and one-half feet by thirty feet was put in. Then the mixer propelled itself backwards twenty-five feet and proceeded as before."

"Parallel with the curb and ten feet out from the same the wearing surface was cut through into the concrete, these parallel cuts being ten feet apart so that our actual blocks of concrete are only twelve and one-half feet by ten feet."

"Some of the streets where the cement paving was laid was very soft and swampy. To obtain a dry and well drained sub-grade, a trench parallel with the curb on each side of the street and eighteen inches out from the curb and eighteen inches below sub-grade was excavated and a four-inch drain tile laid in the same and said drain tile connected with the sewers. The earth excavated from said trenches was hauled away and said trenches were refilled with good clean, hard, burned cinders, making a thorough drainage for the sub-grade."

"The contract price for these cement pavements, including excavations, was \$1.32 per square yard."

"The cost to property owner was five cents a square yard, in addition to the contract price, which includes the cost of engineering, inspection, advertising and levying the assessment, making a total cost of \$1.37 per square yard to the lot owners abutting on said pavement."

"I am changing my specifications for the work that is to be constructed this coming season, calling for my expansion joints to be placed thirty-seven and one-half feet apart, at right angles to the curb, instead of twenty-five feet apart. I am also requiring a softened steel reinforcement plate, one-quarter inch in thickness and two inches in depth, to be anchored back into the wearing surface; said steel plates to be used on each side of the expansion joint to protect the edges of the pavement at that point."

"The reason for using these expansion protection plates is that the weakest point of a cement pavement is at the expansion joints."

Considerable discussion followed the paper and the interest was keen on every point.

At this session also a very interesting talk was given by H. O. Eldridge, of the Office of Public Roads, Washington, D. C., on "The Necessity for Good Roads." The talk was illustrated by numerous pictures showing good and bad roads.

Hon. H. C. Gilbert, presiding judge of Jackson County, Missouri, gave an interesting talk on "The Necessity of National Aid in Good Roads."

FRIDAY MORNING SESSION.

The Friday morning session of the National Association of Cements Users was opened promptly by President Humphrey. John M. Meade, engineer of the Eastern Lines, Santa Fe Railroad, presented a paper on the design of reinforced concrete retaining walls, dealing particularly with the recently constructed wall at Topeka. The paper was most interesting and instructive.

The paper of Buff A. Abrams, of the University of Illinois, on the Methods of Testing Concrete Tile, was read by Prof. Slater. This was followed by a paper by Charles E. Sims on the manufacture and use of cement drain tile. There was some dis-



F. P. WILSON, CITY ENGINEER MASON CITY, IOWA.

cussion and the convention adjourned till the banquet in the evening.

THE BANQUET.

The banquet in the evening was the most brilliant event of this interesting occasion. In song and in speech there was not a dull moment. Plates were set for 125 and during the service of the courses the songs specially arranged for the occasion by Robert F. Hall, were sung with gusto. Mr. Hall led the singing, assisted by Ben F. Affleck, J. C. Van Doorn, Lou Thayer and others.

George H. Forsee, Industrial Commissioner of the Commercial Club, was toastmaster, and he presided in a masterly way, enriching the intervals of speaking with a fund of stories that kept the banqueters in an uproar of laughter.

"It's a great thing to know yourself and great to get together on an occasion like this and know the other fellow," the toastmaster said.

John B. Pew, a young attorney of Kansas City, was the first speaker. He told a number of stories, witty and humorous. He said he inferred from some things he had heard that cement men and lawyers are the most maligned men in this community. He spoke of the relation that the lawyer bears to associations. The lawyer has come into denunciation during the twilight of prosperity. There has been too much destructive statesmanship. What we want is more constructive statesmanship. He spoke eloquently of Lincoln, who he declared was the greatest American who ever lived. When these problems that now confront us are solved it will be the lawyer who will solve them. He said the great questions of the day must and

would be solved on the basis of the greatest good to the greatest number. In keeping with the theme of his talk he closed by reciting Abu Ben Adhem.

John T. Harding, also a lawyer, was the next speaker, Kansas City, he said, was proud to have the cement men here because they are builders. "I admire builders. Anybody can destroy. I think more of the man who builds a skyscraper than the man who sinks a battleship. One of the astonishing things about this cement is its antiquity. The ages have done away with mountain ranges but they have not left a finger mark on the antiquity of cement."

Rev. Looe, from the hill country of Clay County, was the next speaker. He said he believed that the minister of tomorrow will be the comrade of the business man for the uplifting of humanity. Speaking of cement, he said: "I glory in the fact that you men take out of the earth the material of the dead and rear it to the glory of the living."

The Attendance at the Banquet.

Victor Eubank	J. C. Van Doorn
Robt. F. Hall	Charles P. Light
B. F. Affleck	L. V. Thayer
Chas. W. Bradley	J. H. Chubb
Frank J. Thomas	O. E. Ellis
H. G. West	M. L. Prentice
C. K. Arp	Chas. F. Ott
John T. Harding	John B. Pew
Richard L. Humphrey	F. W. Fratt
Fred V. Loos	Louis H. Egan
G. W. Gorree	H. S. Doyle
J. M. Holloway	John E. Moore
J. B. Emmerson	B. F. Lippold
Gerson Isenberg	W. R. Goit
C. F. Scott	C. M. Powell
R. M. Bates	C. S. West
W. F. Fague	C. B. Condon
H. W. Snell	Walter C. Boynton
K. H. Talbot	J. F. Pollock
C. J. Dean	J. L. Darnell
Wm. Butler	E. E. Howard
P. Austin Tomes	W. B. Phillips
S. C. Hadden	W. N. Anderson
E. D. Boyer	L. T. Sunderland
Leigh Hunt	F. R. Bickelhaupt
Percy H. Wilson	F. E. Tyler
Rudolph J. Wig	P. H. Bates
Wm. M. Kinney	A. Steinmetz
Geo. D. Hope	C. E. Matthews
Ed. L. Roll	C. B. McVay
F. P. Wilson	E. R. Stapleton
B. Mulvey	Ira B. Mapes
Edw. F. Krauss	L. R. Ash
W. A. Collings	A. N. Talbot
E. H. Schulz	E. Lee Heidenreich
C. H. Marquess	Robert P. Woods
G. S. McLanahan	Godfrey Swenson
Walter U. Lovitt	H. C. Koch
E. J. Moors	R. A. Gibson
R. W. DuRosey	A. G. Whitney
E. L. Becker	Roseoe Vaughan
John B. Hanna	Victor H. Clarke
Willis Whited	Chas. D. Warner
A. E. Lindau	G. E. Tebbets
Browning Fellers	E. A. Coats
M. J. Higgins	W. T. Sharp
W. O. Sharp	W. N. Smith
H. C. Swearingen	P. F. Belfour
J. G. Morgan	Rudolph P. Miller
E. J. Moore	W. A. Slater
Frank C. Wight	E. D. Wallace
Leonard C. Wason	Allen Brett
W. W. DeBerard	L. S. Louer
E. S. Hanson	Chas. R. Lehrack
W. C. Simpson	Peter Palmer
Frank Whippertman	H. R. Park

THE CLOSING SESSIONS.

At the session Saturday morning the paper of George Gibbs, consulting engineer of the Pennsylvania railroad, on the comparative cost of reinforced concrete telegraph poles was read by the president, as was also the paper on concrete fence posts, by W. J. Towne, of the engineering department of the Chicago and Northwestern railroad. Robert A. Cummings, consulting engineer, of Pittsburgh, was unable to be present and his paper on "The Making and Driving of Reinforced Concrete Piles," was read by President Humphrey. Papers also were read on the subject of field tests of materials prepared by G. H. Bayles, engineer of the New York Dock Company; comparative strength of concrete in the laboratory and in the field, by Rudolph J. Wig, of the Bureau of Standards, and still another on the unit cost of reinforced concrete for industrial buildings.

In the evening, following a meeting of the

Board of Directors, at which all the old committees were reappointed, President Humphrey read the paper on the Fourth Avenue Subway, Brooklyn, written by Frederick C. Noble, and the paper on the Panama Canal prepared by S. B. Williamson. W. A. Collings gave a talk on the use of reinforced concrete in agriculture and P. H. Bates of the Bureau of Standards gave a paper on iron cement, followed by a similar paper read by President Humphrey and prepared by Herman E. Brown, chief engineer of the American Engineering Company of New York.

THE RESOLUTIONS.

The report of the resolutions committee was submitted by Chairman Miller and adopted unanimously. It was as follows:

"The Committee on Resolutions begs leave to submit for the approval of the convention the following resolutions:

"RESOLVED, That a committee be appointed by the Executive Board to consider the form of all standard specifications or recommended practice issued by this Association with a view to securing uniformly so far as practicable,

"RESOLVED, That a committee of five members of this Association, of which one member shall be Chairman of the Committee on Specifications and methods of tests for concrete materials, to be appointed by the President to plan a comprehensive and systematic investigation of the aggregates used for concrete and to interest State Universities, Experiment Stations and other laboratories in carrying out the same.

"RESOLVED, That the Executive Board be instructed to consider the advisability of appointing a committee to report on Standard Specifications for Concrete Highway Bridges and Culverts.

"RESOLVED, That the Committee on Nomenclature be instructed and empowered to extend its work to include the Standardization of the size of drawings, the symbols used on same and the graphical representation of details.

"RESOLVED, That the Committee on Cement Products be instructed to consider the suggestions and criticisms on building block specifications offered at this convention, to confer with the Committee on Reinforced Concrete and Building Laws with a view to reconciling the recommendations of the two committees and to report revised specifications to the next convention.

"RESOLVED, That the report be submitted to the next convention on standard specifications for form posts and that the Executive Board consider the advisability of having this done by sub-committee of the Committee on Cement Products or by a separate committee.

"RESOLVED, That the thanks of this association are hereby tendered the officials of Kansas City and the representatives of the local Engineering and Concrete interests for their hearty welcome, to the citizens of Kansas City for their co-operation in making this, the Eighth Annual Convention, a notable success, and to the guests of the association for their assistance in this success by the contribution of their interesting and valuable papers.

"RESOLVED, That the thanks of this Association are hereby tendered to the members who have aided by the presentation of papers, to the several committees whose efforts have added this meeting to the long series of successful conventions, to the local and technical press whose recognition of the work of this organization is gratefully acknowledged, and to its officers, but particularly to its President, Mr. Richard L. Humphrey, for his untiring devotion to the interest and welfare of this association."

REGISTRATION LIST.

- 1 Richard L. Humphrey, Pres., Philadelphia, Pa.
- 2 Edw. D. Boyer, 1st Vice-Pres., New York, N. Y.
- 3 Arthur N. Talbot, 2nd Vice-Pres., Urbana, Ill.
- 4 E. S. Larned, 3rd Vice-Pres., Boston, Mass.
- 5 J. H. Woolson, 4th Vice-Pres., New York, N. Y.
- 6 Edward E. Krauss, Sec., Philadelphia, Pa.
- 7 H. C. Turner, Treas., New York, N. Y.
- 8 P. S. Hudson, Louisville, Ky.
- 9 Logan Waller Page, Washington, D. C.
- 10 H. S. Doyle, Chicago, Ill.
- 11 R. P. Miller, New York, N. Y.
- 12 W. H. Ham, Boston, Mass.
- 13 Robert A. Cummings, Pittsburgh, Pa.
- 14 Peter Gillespie, Toronto, Canada.
- 15 A. E. Linda, Chicago, Ill.
- 16 C. W. Boynton, Chicago, Ill.
- 17 S. E. Thompson, Newton Highlands, Mass.
- 18 L. C. Wason, Boston, Mass.

RECEPTION COMMITTEE.

- 19 S. Waters Fox, Chairman, Kansas City, Mo.
- 20 Geo. H. Forsee, Kansas City, Mo.
- 21 John V. Hanna, Kansas City, Mo.
- 22 Major Edward H. Schultz, Kansas City, Mo.
- 23 Chas. A. Smith, Kansas City, Mo.

PUBLICITY COMMITTEE.

- 24 F. L. Williamson, Chairman, Kansas City, Mo.
- 25 W. A. Collins, Kansas City, Mo.
- 26 R. E. Donnell, Kansas City, Mo.
- 27 C. B. Sloane, Kansas City, Mo.
- 28 Godfrey Swenson, Kansas City, Mo.

COMMITTEE ON HOTEL ACCOMMODATIONS.

- 29 H. P. Treadway, Chairman, Kansas City, Mo.
- 30 H. C. Koch, Kansas City, Mo.
- 31 Henry McGrew, Kansas City, Mo.
- 32 A. Steinmetz, Kansas City, Mo.
- 33 J. C. Taylor, Kansas City, Mo.

EXCURSIONS COMMITTEE.

- 34 J. S. Tritle, Chairman, Kansas City, Mo.
- 35 Walter C. Root, Kansas City, Mo.
- 36 John Prince, Kansas City, Mo.
- 37 S. Stoddart, Kansas City, Mo.
- 38 H. Struckman, Kansas City, Mo.

GOOD ROADS COMMITTEE.

- 39 A. H. Stevens, Chairman, Kansas City, Mo.
- 40 L. R. Ash, Kansas City, Mo.
- 41 James N. Clark, Kansas City, Mo.
- 42 Judge H. C. Gilbert, Kansas City, Mo.
- 43 L. T. Sunderland, Kansas City, Mo.

FINANCE COMMITTEE.

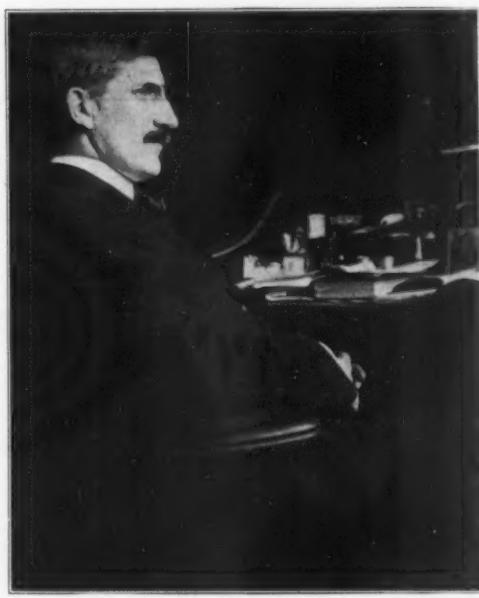
- 44 E. L. Hedenreich, Chairman, Kansas City, Mo.
- 45 Geo. E. Nicholson, Kansas City, Mo.
- 46 Hiram Norcross, Kansas City, Mo.



RUDOLPH P. MILLER, SUPERINTENDENT OF BUILDINGS, NEW YORK CITY.

- 47 Geo. Siedhoff, Kansas City, Mo.
- 48 E. L. Winn, Kansas City, Mo.
- 49 E. E. Howard, Chairman, Kansas City, Mo.
- 50 J. P. Henry, Kansas City, Mo.
- 51 A. H. Crane, Jr., Kansas City, Mo.
- 52 Jas. L. Darnell, Kansas City, Mo.
- 53 R. E. Hall, Kansas City, Mo.
- 54 Henry F. Hoyt, Kansas City, Mo.
- 55 F. W. Fratt, Chairman, Local Com., K. C., Mo.
- 56 L. H. Egan, Sec., Local Com., Kansas City, Mo.

- 57 C. W. Chapman, New York, N. Y.
- 58 E. J. Moore, New York, N. Y.
- 59 F. Austin Tomes, New York, N. Y.
- 60 F. R. Bickelhaupt, Cleveland, Ohio.
- 61 Allen Brett, Philadelphia, Pa.
- 62 E. R. Stapleton, Kansas City, Mo.
- 63 William M. Kinney, Pittsburgh, Pa.
- 64 Clarence K. Arp, Chicago, Ill.
- 65 H. W. Snell, Chicago, Ill.
- 66 Clyde J. Knisely, Chicago, Ill.
- 67 John Early, Newton, Kans.
- 68 W. W. DeBerard, Chicago, Ill.
- 69 Herbert P. Green, Kansas City, Mo.
- 70 Willis Whited, Harrisburg, Pa.
- 71 Frank J. Thomas, Oklahoma City, Okla.
- 72 C. F. Osborn, Howard, Kans.
- 73 F. H. Misner, Lincoln, Neb.
- 74 J. H. Chubb, Chicago, Ill.
- 75 J. P. Beck, Chicago, Ill.
- 76 Chas. R. Lebrack, Lincoln, Neb.
- 77 Ralph L. Shainwald, Jr., New York, N. Y.
- 78 E. S. Hanson, Chicago, Ill.
- 79 B. F. Lippold, Chicago, Ill.
- 80 Chas. D. Warner, Chicago, Ill.
- 81 Frank C. Wright, New York, N. Y.
- 82 J. W. Brandt, Garnett, Kans.
- 83 Percy H. Wilson, Philadelphia, Pa.
- 84 O. P. Stone, Chanute, Kans.
- 85 O. T. Allen, Chicago, Ill.
- 86 Geo. A. Williams, Muskogee, Okla.
- 88 Ralph A. Benedict, Kansas City, Mo.



JOHN E. MOORE, CHIEF CHEMIST, ROBERT W. HUNT & CO., CHICAGO.

- 89 Chas. P. Light, Washington, D. C.
- 90 Gerson Isenberg, New York, N. Y.
- 91 Kenneth H. Talbot, Oak Park, Ill.
- 92 C. M. Powell, Chicago, Ill.
- 93 August Slowski, Tonganoxie, Kans.
- 94 Frank O. Marvin, Lawrence, Kans.
- 95 L. V. Thayer, Minneapolis, Minn.
- 96 W. P. Anderson, Cincinnati, Ohio.
- 97 M. E. Gordon, Chicago, Ill.
- 98 Wm. F. Sharp, Moore, Mont.
- 99 Joe Ubbink, Port Washington, Wis.
- 100 H. A. Sutter, St. Joseph, Mo.
- 101 C. R. DuBois, St. Joseph, Mo.
- 102 C. F. Scott, Oklahoma City, Okla.
- 103 John E. Warner, Benton, Mo.
- 104 B. H. Northcott, Hesston, Kans.
- 105 L. H. Paul, Des Moines, Ia.
- 106 Frank Whippleman, Omaha, Neb.
- 107 Peter Palmer, Oakland, Neb.
- 108 G. H. Dougherty, Three Rivers, Mich.
- 109 John T. Snowball, Ellsworth, Kans.
- 110 W. T. Chollar, Chicago, Ill.
- 111 J. C. Spahr, Skidmore, Mo.
- 112 Fred C. Dreher, Denver, Colo.
- 113 R. J. Wig, Washington, D. C.
- 114 Harry Gardner, Lawrence, Kans.
- 115 Walter C. Boynton, Detroit, Mich.
- 116 E. B. Page, Oklahoma City, Okla.
- 117 B. F. Aitken, Chicago, Ill.
- 118 J. H. Felt, Kansas City, Mo.
- 119 Daniel B. Luten, Indianapolis, Ind.
- 120 P. H. Bates, Pittsburgh, Pa.
- 121 R. V. Leeson, Topeka, Kans.
- 122 R. A. Gibson, Hot Springs, Ark.
- 123 Bert E. Elmer, Kansas City, Mo.
- 124 O. Hudson, Kansas City, Mo.

GUESTS.

- 125 Darius A. Brown, Mayor, Kansas City, Mo.
- 126 G. E. Tebbits, Engr., K. C., Term R. R. Co.
- 127 Dr. Waller M. Cross, City Chemist, K. C., Mo.
- 128 J. L. Harrington, of Waddell & Harrington, Consulting Engineers, Kansas City, Mo.
- 129 F. W. Fratt, President, Union Bridge and Terminal Railroad Company.
- 130 Eldridge, United States Dept. of Agriculture, Washington, D. C.
- 131 H. V. Schreiber, Managing Engineer, Sellers & Ripley, Philadelphia, Pa.
- 132 W. A. Slater, Urbana, Ill.
- 133 F. P. Wilson, City Engineer, Mason City, Ia.
- 134 D. B. Luten, Indianapolis, Ind.
- 135 P. H. Bates, Pittsburgh, Pa.
- 136 A. O. Cunningham, Chief Engineer, Wabash R. R., St. Louis, Mo.
- 137 E. W. Groves, City Engineer, Ann Arbor, Mich.
- 138 W. S. Gearhart, State Engineer, Manhattan, Kans.

GOOD ROADS.

So much has been said in the Cement Users Convention on the subject of Good Roads that Rock Products deems it timely to tell our readers something about the American Association for Highway Improvement and what it is accomplishing.

The American Association for Highway Improvement was organized November 22, 1910. Its purposes (see official handbook) are:

To correlate and harmonize the efforts of all existing organizations working for road improvement.

To arouse and stimulate sentiment for road improvement.

To strive for wise, equitable and uniform road legislation in every state.

To aid in bringing about efficient road administration in the States and their subdivision, involving the introduction of skilled supervision and the elimination of politics from the management of the public roads.

To seek continuous and systematic maintenance of all roads, the classification of all roads according to traffic requirements, payment of road taxes in cash, and adoption of the principle of State and the State supervision.

To advocate the correlation of all road construction so that the important roads of each county shall connect with those of the adjoining counties, and the important roads of each State shall connect with those of adjoining States.

To strive for the utilization of convict labor on works of public improvement, so as to involve the least competition with free labor, the greatest benefit to society and the most thorough moral and physical development of the convict. In most cases this can be done by using the convicts in preparing road materials or in the actual building of roads.

What the Railroads Have Done.

During the first year the following railroad companies contributed to the association on the basis of 10c per mile of railroad per annum.

- Atlantic Coast Line.
- A. & W. P. R. & Western Ry., of Alabama.
- Chesapeake & Ohio Ry. Co.
- C. C. & O. Ry. Co.
- Louisville & Nashville.
- M. K. & T. Ry. Co.
- Georgia Railroad.
- Nashville, Chattanooga & St. Louis Ry. Co.
- Norfolk Southern R. R. Co.
- Norfolk & Western Ry. Co.
- N. O. & North-Eastern R. R. Co.
- Southern Railway Company.
- St. Louis & San Francisco R. R. Co.

The following railroad companies have joined as Sustaining Members at \$100 per annum each:

Seaboard Air Line.
Southern Pacific Company.
Union Pacific Railroad Co.
El Paso & Southwestern Ry.

Membership.

The Association now has about 750 regular members at \$5.00 per annum, and about 60 sustaining members at \$100 per annum.

Working Plan.

In addition to its volunteer non-paid workers, the Association has a small corps of thoroughly competent salaried men whose duties are: to appear before State legislative committees, on invitation, and give advice on pending road legislation; to address conventions and local meetings in advocacy of needed reforms in road improvement; to organize and prepare working plans for local road improvement associations; to prepare articles of educational and news value for the use of the press in arousing, stimulating and directing public sentiment.

The Association is continually assembling data concerning the progress and status of the road movement, embracing legislation, bond issues, mileage and cost of roads, organization work, etc.

Annually the Association holds a Road Congress for the discussion of problems of road construction, maintenance and administration, and for correlation and co-ordination of the work conducted by the various States and interstate road organizations.

The Association co-operates with railroad companies and the National Government in educational campaigns through the medium of "Good Roads Trains." Under this plan the Government provides a miniature working exhibit illustrating types of roads and methods of construction, a stereopticon with slides, and assigns one or more demonstrators to accompany the train at Government expense for salary, travel and subsistence. The Association at its own expense provides an experienced organizer who organizes in each county traversed, a practical association and suggests a constitution and a working plan for it. The plan in general is as follows:

It is suggested that as soon as the organization has been completed, a constitution and by-laws adopted and permanent officers elected, working committees should be selected whose distribution of duties and responsibilities should be somewhat as follows:

(a) Committee on Road Administration: This committee should ascertain the laws upon which the road administration of the country or locality is based, the personnel of the official organization selected to carry out such laws, the revenues available for road purposes, how obtained, how expended, and what system of accounting and recording is followed. It should recommend needed reforms in road laws, organization and administration; it should ascertain the various sources of revenue and plans for raising additional revenues; and should formulate its findings into a report containing recommendations for the future financing of road work.

(b) Committee on Road Materials: This committee should ascertain the location, character, quantity and availability of all road materials in the country. This work can be much facilitated by co-operation with the Office of Public Roads of the United States Department of Agriculture, which makes analyses and tests of road materials free of charge, whereby the kind and quality of road building material can be definitely ascertained. The committee should also make a study of transportation facilities for road materials, and work out plans whereby the county or locality can obtain the best materials in the easiest and most economical manner. They might consider the advisability of the purchase of quarries and gravel pits, the arrangement of special rates with the railroad companies, the preparation of the materials by county prisoners, etc.

(c) Committee on Road Construction and Maintenance: This committee should ascertain the mileage of public roads, and classify them according to amount and importance of traffic, ascertaining the improvement that is necessary and the probable cost; draw up a general plan for the gradual improvement of all the county roads along definite lines, according to the means available; obtain data bearing upon all phases of road construction; and should co-operate closely with the committee on road material in drawing up its recommendation as to the kind and amount of road construction to be undertaken. It should make a close study of road maintenance, with a view to introducing the best and most economical methods for maintaining the roads. It should look into the relative merits of the various kinds of road equip-



PARTY THAT VISITED LEAVENWORTH PRISON.

ment, and aid the county authorities by information and advice in securing the necessary equipment.

(d) Committee on Split-Log Drag: This committee should devise ways and means for stimulating interest in the road drag, and should endeavor to bring about the general use of this simple little implement. Records could be kept of the number of drags in use, and the mileage of roads regularly dragged as the result of the work of the committee. Contests could be inaugurated and publicity given to the work, so that the interest might become widespread, and practical results accomplished.

The Association plans to issue instructive publications from time to time, including the papers read and proceedings had at the Annual Conventions, and a Year Book which shall be a complete reference work on road improvements as well as a record of progress of the year.

The foregoing specific examples indicate in part the methods by which the Association is endeavoring to carry out its purposes. New methods and new lines of activity have been recently developed and are utilized as far as practical.

Work of the Past Year.

The Association co-operated with the Southern Railway Company in the operation of a good roads train, and completed arrangements for similar work with the Atlantic Coast Line and the M. K. & T. Ry. Co. early in 1912. Tentative arrangements are being made with other railroad companies for the operation of good roads trains.

Twenty-seven State and Interstate Road Organizations affiliated with the American Association during 1911 with a view to unifying and correlating their work. These organizations are:

Alabama Good Roads Association.
Ohio Good Roads Federation.
Western Michigan Development Bureau.
Gulf Coast Good Roads Association.
Arkansas Good Roads and Drainage Association.
North Carolina Good Roads Association.
South Carolina Good Roads Association.
Good Roads Club of Georgia.
Southern Appalachian Good Roads Association.
Central Highway Association.
Capital Highway Association.
Memphis-Bristol Highway Association.
Southeastern Kentucky Good Roads Association.
Omaha-Denver Good Roads Association.
Inter-Mountain Good Roads Association.
Oregon Association for Highway Improvement.
North Dakota Good Roads Association.
Iowa Good Roads Association.
Indiana Good Roads Association.
Bristol-to-Washington Highway Association.
Virginia Road Associations.
Montana Society of Engineers.

International League of Highway Improvement.
New Santa Fe Trail Association.
Aroostock County Good Roads Association of Maine.

Knox County Good Roads Association of Tennessee.

Mothers' Congress.

Nearly one hundred local associations were formed in line with the plan already outlined herein, the work embracing the States of Tennessee, South Carolina, Virginia, Georgia, Florida and Maine.

The officers of the Association addressed numerous meetings including legislative conferences.

News and educational articles were prepared and sent to newspapers and magazines at the rate of three or four a month, with the result that the subject of road improvement was kept before the public with a thoroughness and persistence never before known in this movement. The Saturday Evening Post of March 4, 1911, contained a two-page illustrated article on the Association and its work.

The American Road Congress, held at Richmond, Virginia, November 20-23, 1911, marked the completion of the first year's work. Upwards of 900 delegates were actually registered, while the attendance was well over 1,200. Many of the foremost men of the nation gave addresses, which will be included in the proceedings soon to be published.

A digest of road laws has nearly been completed to January 1, 1912, and will be published, with other material, in the Year Book.

At the American Road Congress steps were taken which will lead to the holding of a joint road congress each year to be participated in by the American Automobile Association, the American Road Builders, the National Association of Road Machinery and Material Manufacturers, and the American Association for Highway Improvement.

VISIT LEAVENWORTH PENITENTIARY.

Col. J. P. Beck, general manager of the Cement Product Exhibition Co., and Major Robert Crawford conducted a party of thirty-six of the exhibitors to the U. S. Penitentiary at Leavenworth, Kansas, Sunday. Promptly at 9 o'clock the party boarded a special car and were soon on their way. Barricading a hot box there was nothing to mar the trip out to the prison. On arrival, Mr. Beck presented his credentials and the crowd was admitted without question. Every man, however, was asked first, on his honor, whether he carried a firearm and, if so, to kindly deposit it with the outer guard.

This little formality being complied with by each one of the visitors, they all filed in. Deputy Warden W. H. Mackey received the visitors on behalf of R.

W. McClaughry, the warden, who was unable to appear owing to a slight indisposition. The warden, it might be mentioned, is a little over three score and ten, and the dean of the wardens in this country. He is well known as having one of the best conducted prisons in the United States, if not in the entire world. As the deputy warden escorted the visitors through the prison, he explained its many points of interest, so that any of the party later on will find everything familiar. There are over a thousand prisoners now confined here, seventeen of whom are military prisoners, the balance being civil prisoners. There are only thirty-six bankers at present guests of Uncle Sam, but more are expected. The deputy called them ex-bankers, as they are not cashing checks now. There are only two Chinamen at the prison, which would seem to indicate that the Chinese know how to be good, or are good bankers. There were only half as many blacks as whites, and a fair sprinkling of reds, to give color to the situation. Every now and then the cement men were counted, so that none of them staid behind. The quarters are so clean, cool and comfortable, and so far removed from the noise and bustle of the outside world, and its contamination, that it was feared that some of the boys would sneak in.

The men were all in their cells, except those engaged in the various prison departments. This prison has been in course of construction for the past thirteen years (there's that unlucky number again), and it is expected that it will take another thirteen to complete it. The exterior is constructed of Batesville Oolitic limestone from the Pfeiffer quarries at Batesville, Arkansas. The blocks are shipped to the prison in the rough and the prisoners cut and dress them and place them in the building. The balance of the place is constructed of bricks, made on the ground, and concrete. Some of the walks will be laid with concrete paving blocks made in molds, by the inmates and the concrete experts in the party said they were as good as could be manufactured. A perfectly equipped machine shop is maintained, where all tools are made and kept in repair. It might be mentioned here that there are some very fine mechanics here, and the deputy warden showed the party a fake gun, made of coal and wood made under the vigilant eyes of the foremen and the guards, and which was successfully employed by six convicts to gain their exit from the confines of the penitentiary. One of the men at a given signal took the fake pistol and shoved it under the nose of the engineer, who was at his post, getting ready to switch some cars in the yard. He politely, but firmly, told him to open the throttle wide, and run out. A little matter of two iron barred gates did not hinder them in the slightest, and the guards in the tower did not fire, because they thought the engine was running away. The prisoners were shrewd enough to crouch down low when they went out and it was several minutes before the trick was discovered. In a few minutes the prison whistle was screeching out the signal for the farmers, who always have a shotgun handy, as they get \$60.00 for every man returned to the bastile. After going four miles the engine encountered an obstruction in the way of a rail laying over the track. This temporarily halted them in their mad career and the quartet made a jump, and hid in the nearby woods. All but one was eventually captured. He is a bandit of the worst type, and is still at large. This was two years ago and the deputy warden said that they felt sure they would get him yet and he said it in such a manner that he left no doubt in any of his hearer's minds that he believed it.

Deputy Warden Mackey is a man of determination and great force of character. Although a stern disciplinarian, he is broad and humane in his views, as was evidenced by the fact that he is going to allow the "boys," as he calls them, to play ball this coming season. He will have three teams, a white, a red, and a black. There are already three hundred applications for positions on the teams. The applicants are going to be tried out as soon as the weather permits. The best players only will be selected and it will be a much coveted honor because it carries with it unusual privileges. All the members of the teams will be exempted from work, but will be compelled to keep themselves in perfect condition by regular exercise. They will have to play fast ball or they will be supplanted by another player at once. It can readily be seen that there will be some snappy ball playing. A big grandstand is going to be erected inside the grounds and a fine diamond laid out. Twice a week all the convicts will be allowed to view the contests, which promise to be fierce. No greater punishment could be meted out to the men than to be deprived of their privilege of witnessing these ball games, and the deputy warden does not think he will have to use the solitary confinement cells any more. Some of the boys tried these cells just to see how it felt



GARNETT CAMPBELL EUBANK, PRESS REPRESENTATIVE.

and they all said they would be good, if let out. However, the deputy warden explained that some of the prisoners would hold out for five or six days, displaying a fortitude and courage worthy of a much better cause. There is a huge bake shop having a capacity of five thousand loaves a day. Only five hundred are baked, however, every day, these being quite large in size and of fine quality, much better as a matter of fact than much of the bread sold by the corner grocers, as such. As meal time had arrived the deputy warden gave the visitors an opportunity of witnessing the men at their dinner, a sight not soon to be forgotten. The mess hall is a very large, well lighted, sweet smelling room, with great rows of desks like those in schools. They are five across each row. The band struck up a martial air as the cement men took their positions on the balcony overlooking the big hall and soon the men came in, in double file, accompanied at intervals by guards. The trustees came first in neat, dark blue suits, next the others in order of preferment, on account of good conduct. There was only one man in stripes and he had tried to escape a few weeks ago. This badge of disgrace is his punishment.

The food was wholesome, well cooked and plentiful. Every man is given as much as he can eat. A plate was brought up for inspection. The meal consisted of savory roast beef, delicious mashed potatoes, beans, brown gravy, bread and coffee. A truly satisfying and palatable meal. The deputy warden explained that the meals cost less than 13



WALTER A. BIRMINGHAM, PRESS REPRESENTATIVE.

cents (there's that thirteen again) and immediately someone suggested that he ought to be able to get a job at the Baltimore Hotel.

There were many more points of interest: among them the auditorium where performances are held with local talent, some of it professional, and which it was explained was better than some at the regular theaters. We always thought they had a place for good actors and now we have found out where it is.

Deputy Warden Mackey made a big hit with the delegates and he promised to come down to the show and see the boys. J. M. Russell, assistant deputy warden, and George S. Stewart, guard were also in attendance upon the party.

The trip was one of keen interest.

Those Who Went to Prison and Back.

Thomas J. Zimmer, Jr.	H. Chrisptopherson
Geo. McCarren	F. H. Clarke
W. E. Wright	R. H. Patchen
V. J. Stanton	W. L. Webster
H. M. Scott	W. A. Scott
H. J. Thompson	S. L. Maddox
A. McGuire	Sid. L. Wiltse
Ole Joslin	E. F. Klee
W. B. Akey	C. L. Dewey
Chas. Bradley	John Oleson
J. P. Beck	B. F. Lippold
P. Austin Tomes	Geo. Wiseman
B. S. Bates	L. V. Thayer
William Walter Smith	Willard J. Henry
J. S. Slosson	E. E. Buhler
Gerson Isenberg	Joe Ubbink
F. Wipperman	Peter Palmer
	R. Crawford.

NEED OF FEDERAL AID IN ROAD CONSTRUCTION.

By Judge H. C. Gilbert.

Federal Aid in the construction and maintenance of Public Highways is not unknown in the United States, for Washington recommended in a letter to Patrick Henry that the roads of Virginia be taken away from the control of the County Courts and be given to the State Authorities.

One of Hamilton's pet schemes was that of road improvement, and he recognized thoroughly that roads left to local authorities would never be satisfactorily built; in fact, most all of the great leaders in American History, at some time during their public service, either directly or indirectly, advocated Federal Aid in the building of Public Highways.

The first sixty years after the foundation of this Government something like fifteen million dollars was appropriated for the building and maintenance of public highways. However, the only road of any importance constructed by the Government was the National Road known as "Cumberland Pike," 650 ½ miles in length, 80 feet wide, and macadamized for a width of 30 feet, which, it was originally intended, should go from the tide water of the Atlantic Ocean to the Ohio River. It was constructed from Cumberland, in Maryland, to a point in Ohio several hundred miles from the Ohio River, and there it was allowed to stop: being finally donated to the States through which it passed.

In this way started the first great effort of the Federal Government to build and establish, as the Constitution of the United States contemplated, a system of Post Roads all over the Country. But why did the Government quit this great work? Was it because it was thought to be unconstitutional? No! It was the advent of the railroads; the beginning of a new era which revolutionized the transportation facilities of this Country and convinced the States and Federal Government that it was the quickest and cheapest transportation. The Federal Government was not slow to get back of this great enterprise and assisted in the construction and equipment of great trunk lines reaching from ocean to ocean, by turning over to them about two hundred million acres of public domain, and even the personal credit of the Government was given in their construction. But, from the very beginning of the railroad era, appropriations for public highways ceased, until today we have the finest railway in the world and the poorest highways. Therefore, the rapid construction of railroads, with their improved facilities for transportation, and the development of our water-ways, have caused our public highways to be neglected and their great importance lost sight of. However, it is gratifying indeed to see that the people of this country are awakening to the fact that the railroad cannot assume the functions of our public highways. Especially is this true in the commercial exchange of farm products, where every ton of freight carried by railroads, or transported by water, must necessarily be conveyed over a wagon road at either, or both, terminals. Therefore, with increased railroad facilities, and the improvement of our water-ways, the greater the demand for more and better public highways.

We are now paying annually over fifty million dollars to these railroads for carrying the mails, but not one cent is paid to the farmers for the use of one million miles of country roads and highways built and maintained by local communities, and used constantly by the Federal Government in conveying the mails over the Star Routes and Rural Free Delivery.

The Federal Government has appropriated many millions of dollars for improving the highways of our insular possessions. When this Government took possession of Cuba Uncle Sam immediately commenced constructing a system of good roads and improving the sanitary conditions at a cost of millions of dollars, which so pleased the Cubans that they promised to be good. However, they soon learned to appreciate the advantages of good roads, and kicked up such a row again that Uncle Sam had to go back and build them some more good roads to quiet the disturbance.

When this Government fell heir to the Philippine Islands the first thing Uncle Sam did was to spend vast sums of money to build good roads and better the sanitary conditions of the Islands.

Are you aware of the fact that, through Federal aid, Cuba, Porto Rico and the Philippine Islands are today enjoying the benefit of better roads and better

sanitary conditions than many of the states in this country which are bearing their proportion of the burden of this cost?

If it is right to appropriate millions of dollars to improve the roads of our insular possessions, why is it not right for the Government to do something for our highways? It matters but little how high the taxes, if they are spent for the benefit of those who pay them.

Federal aid is now connecting the two great oceans by constructing the Panama Canal, at a cost of four hundred millions of dollars.

Billions of dollars have been paid by the Federal Government for the development of the waterways rivers and harbors, to protect commerce.

The National Government has done much to benefit cities and towns in the construction of postoffice buildings, courthouses and other Federal structures for the necessary work of the Government.

Vast amounts of money are being expended for irrigation, in reclaiming arid lands, and it has come to be understood that large tracts of swamp lands are to be drained by the Government.

Even our manufacturers have been protected from the underpaid labor of the old world.

But what is the Government doing for the great inland agricultural districts of our country, and the farmers, if you please? It seems that Uncle Sam has left the farmer sticking in the mud at a loss of about two billion dollars annually, on account of the deplorable condition of our public highways, which they are compelled to use in conveying their farm products to the markets and railway stations. Just think of it, two billion dollars; why, that is more than twice the amount paid for all the freight to all the railroads of the United States, and would build a magnificent, broad, paved highway from ocean to ocean, and one from the Gulf to the lakes.

Are we not overlooking the fact that whatever benefits the farmer benefits the nation; and whatever injures the farmer injures the nation?

It seems to me that the time has come in the history of this country when the Government should give more attention to our public highways, and thereby add to the welfare of the farmers, who are well termed "the backbone of the nation."

It has been the experience of the American people that the farm has been the nursery from which, in time of war, to recruit our armies, and, in time of peace, from which has come the new blood, the strong, virile men and women to fill the gap in the cities, and keep going the industries and commerce of the urban life.

It therefore behoves the nation to maintain this nursery, as it is also the primal source of our great wealth.

With prosperity, the rapid progress of civilization, and the congregation of men in cities and towns, their wants multiply and the products of the earth have come to be collected and transported to supply them. In this great commercial enterprise it will be observed that the public highways are of the greatest importance, as they are the first link in the chain of travel from the farm to the market. In fact, without roads, the interchange of advantages, both intellectual and physical, which now exist in all highly civilized countries, between the rural and the urban population, could not be maintained. Even towns and cities would fail to exist, likewise the social and financial standing of those of the rural districts are evidenced by its good roads.

It is, therefore, apparent to even the casual observer that the solution of the problem is better public highways.

Every other method of transportation may be said to have attained that degree of efficiency and perfection required by the present day demands, except transportation over public highways.

It has been truly said that you can tear down every edifice in our cities and labor will rebuild them, but abandon farms and highways and our cities will disappear forever.

It is an historical fact that no nation can be called truly great until it has become a good road builder. It is also an historical fact that no nation has ever been a success as a good road builder without Federal aid. The magnificent roads of the ancients were under central control, and those of modern Europe are national. The United States is perhaps the only civilized nation of any consequence that has no system of national public highways.

A friend of mine once said to me that he had visited all the great cities of the world, and found that this country excelled in everything until he commenced to drive over the beautiful highways of France, and it was then, he said, "I bowed my head in shame." How long, I say, are we Americans going to bow our heads with shame, when we compare our miserable highways with the magnificent and beautiful roadways of Europe?

It will not be long—for there is no subject today of greater importance, and which concerns all the people of this country so much as good roads; it is the crying necessity of our nation. We are proud to note that at the present time public interest in this subject is wide awake, and the enthusiasm and activity in this work throughout the entire nation, with Federal aid no longer a probability but an actuality.

We are destined to become the greatest road builders of the age, and then the American, no matter on what spot of the globe he may be, can raise his head with pride, and thank God that he was born under the Stars and Stripes, the emblem of the greatest republic the world has ever known.

There is no field in which the conservationist can show such a saving of energy and wealth as in the construction of good roads. I am thoroughly convinced that no better investment for the people now living, and the generation yet unborn, than that the Federal Government building a magnificent system of public highways throughout the land. I am also a firm believer in bonding the counties and states for the construction of better roads. The bonding method spreads out the cost so that it falls evenly upon all. After generations reap a great benefit, and why not let them pay the cost and we enjoy the present use? It is not only right and fair that future posterity should be compelled to assume part of this burden. The world is awake, and we are living in a progressive age, and the narrow minds who refuse to see and realize this fact are fast being relegated to the rear.

We have now reached another era in transportation facilities, which promises to serve a great and noble purpose, not only in this country, but all over the civilized world. It will not curtail the advantages which the railroads, waterways and rivers and harbors of this country afford to the people, but will aid vastly in their development, and will also demonstrate the economy of good highways.

I now refer to the automobile and motor driven vehicles, which are perhaps today the greatest civilizer and labor saving device of the age. The phenomenal growth of the automobile for pleasure touring and busi-

ness, together with the motor traffic, has proven the greatest incentive of modern times to the building and maintenance of improved roads. Especially is this true of hard surfaced roads, which composed about nine per cent of the two hundred million miles of public roads in the United States.

It is impossible for township, counties and states alone to improve the roads fast enough to meet the growing demand of the time. We are, therefore, coming back to the beginning of the Cumberland Pike, where it is necessary again for the Federal Government to take up the work started and left off with Cumberland Pike.

It does not only owe this to the people of the United States, but it is its duty. The power was delegated to by the States when our forefathers established this government, and in their wisdom they realized the necessity of the Federal Government building and maintaining a great national system of public highways, such as other highly civilized countries were doing. It is, therefore, evident that if it had not been for the steam engine, coming along at the time it did, Cumberland Pike would have not only been completed, but the people today of the United States would be enjoying such an excellent and splendidly maintained National system of public highways as would excite the admiration of the world.

This government should take the same interest in the improvement of our public highways, and see that they are developed to the same degree of efficiency as the public service corporations have done with the telephone, telegraph, railroads and steamship lines. In fact, the public highways are the only transportation facilities now left to the control of the public. It has been wisely said that good roads can be built all over this country without burdening the people, if systematic, business-like methods are employed in the work. And every mile of road built in a community will increase land values.

Improve morals: elevate citizenship; stimulate trade; beautify the country; promote educational interest; raise the standard of religion, and add to the wealth, health and happiness of the people; and also solve to a great extent the high cost of living.

Improved roads reduce the percentage of illiteracy by bringing the country schools and churches within easy access, and the postman with the daily papers, magazines and other periodicals of the day, to the door of the rural

PROPOSED RECOMMENDED PRACTICE FOR PLAIN CONCRETE DRAIN TILE.

This recommended practice is intended to cover the general requirements for the manufacture of plain concrete drain tile.

MATERIALS.

Cement.—The cement shall meet the requirements of the Standard Specifications for Portland Cement of the American Society for Testing Materials, and adopted by this Association (Standard No. 1).

Aggregates.—The aggregates shall be clean, hard, durable material, and shall have no coating of clay or other substances which would in any way interfere with the bond between the cement and the aggregate.

(a) Fine Aggregate.—The fine aggregate shall consist of sand or crushed stone graded from fine to coarse, all of it passing when dry, a screen having $\frac{1}{4}$ in. diameter holes; not more than 20 per cent shall pass a sieve having 50 meshes per lineal inch, and not more than 6 per cent of it passing a sieve having 100 meshes per lineal inch.

(b) Coarse Aggregate.—The coarse aggregate shall consist of gravel, crushed stone or other suitable material graded in size, which is retained on a screen having $\frac{1}{4}$ in. diameter holes.

Water.—Water shall be clean, free from oil, acid, strong alkalies or vegetable matter.

PROPORTIONS.

The proportions of cement to aggregate shall be such as require at least the minimum amount of cement to produce strength and density as hereinafter specified. The proportions of the various sizes of aggregates and cement to aggregates shall preferably be made by weight. If by volume, a bag of Portland cement shall be considered 1 cubic foot.

Measuring.—Methods of measurement of the proportions of the various ingredients shall be used which will secure uniform measurements at all times.

MIXING.

The ingredients of concrete shall be thoroughly mixed dry, sufficient water added to obtain the desired consistency, and the mixing shall continue until the cement is uniformly distributed and the mass is uniform in color and homogeneous.

Machine Mixing.—The mixing shall preferably be done with a machine mixer of a type which insures the proper mixing of the materials throughout the mass.

Consistency. (a) Semi-wet Process.—The consistency of the concrete shall be such as to show web-like markings on the surface of the tile when the forms are removed.

(b) Wet Process.—The consistency of the concrete shall be such that it will be forced into every part of the mold by jarring or tapping.

Retempering.—Retempering or using mortar or concrete 40 minutes after being mixed shall not be permitted.

CURING.

Natural Curing.—The tile shall be protected from the sun and strong currents of air for a period of at least seven days. During this period they shall be sprinkled at such intervals as is necessary to prevent drying, and maintained at a temperature of not less than 50 degrees F. Such other precautions shall be taken as to enable the hardening to take place under the most favorable conditions. After seven days the tile may be removed to the yard, but in no case used before they are 28 days old.

Steam Curing.—The tile shall be removed from the molds as soon as conditions will permit and shall be placed in an atmosphere of steam saturated with moisture for a period of at least 48 hours. The tile shall then be removed and stored for at least eight days. The steam-curing chamber shall contain an atmosphere saturated with moisture and maintained at a temperature between 100 degrees and 130 degrees F. (This does not apply to pressure steam curing.)

DIMENSIONS.

(a) Diameter.—The diameter or size of the tile shall refer to the inside diameter and be uniform in all directions.

(b) Thickness.—From 4 to and including 22 ins. in diameter, the wall thickness shall not be less than one-twelfth of the diameter. Tile above 22 ins. in diameter shall have a wall thickness of not less than one-tenth of the diameter.

(c) Length.—The length of the tile shall be uniform at all points, and preferably not less than the diameter, with a minimum of 12 ins.

The F. W. Stark Contracting Company, of Gates Mills, Ohio, has been incorporated with capital stock of \$3,000. The incorporators are F. W. Stark, Arthur C. Louise, F. and William Stark.

The Burkitt & Wylie Construction Company, of Winnetka, Ill., has been incorporated with capital stock of \$5,000 to do contracting. The incorporators are Charles Burkitt, Allen W. Wylie and Carlton Prouty.



JUDGE H. C. GILBERT.

population. They also bring the city man into the country, and, by creating a demand for residence property, greatly enhance the value of the farm. In fact, their benefits extend to every citizen, and facilitate all enterprises.

The control of road management, by towns and small districts, is inefficient, because the organization is too small to support a proper management, or provide the necessary appliances for economic work. However, county control is more successful, as the county is usually strong enough to secure intelligent management, and homogeneous enough to have common interests. In my opinion the proper management of the construction and maintenance of rock macadam roads, or any other treatment to improve roads, must come through transferring such work to the charge of those who make it a profession, and should be under the control of either the county, state or Federal Government. Such methods of road construction and maintenance are now employed in many European countries; especially England, Germany and France, who are perhaps today the greatest road-builders since the time when the Greeks, Romans and Carthaginians built the most gigantic, solid structures of road work the world has ever known.

Good roads made Rome the market place of the world; likewise, the educational center of the world. This high position could not have been attained without the magnificent roads of the Caesars by which the Roman Capitol was made to communicate with all the principal towns of the Empire by paved roadways. The first of these roads was constructed under the direction of Appius Claudius in the year 312 B. C., and was named for him "The Appian Way"; and, on account of its excellence and beautiful construction, was often called "The Queen of Roads."

The Carthaginians were the most systematic and scientific road builders, and constructed such a magnificent system of good roads that enabled them to build up and consolidate an Empire, so prominent in military and naval achievements, and in the arts and industries of civilized life that, for over 400 years, it was able to hold its own against the great powers of Greece and Rome.

It is, therefore, evident that even the ancients realized the importance of good national highways and their benefits to nations. As I stand here today before this intelligent audience, which is fairly bubbling over with enthusiasm in the interest of good roads, I fully realize that it will not be long before the grand old state of Missouri will be fairly gridironed with good rock macadam roads, and the day not far distant when great, broad paved highways will reach from ocean to ocean, and from the gulf on the south to the lakes on the north.

KANSAS CITY

Cement Show One of the Best Ever Held Under the Auspices of the Cement Products Exhibition Company.

Kansas City's first annual cement show under the auspices of the Cement Products Exhibition Company was a brilliant, unqualified success.

When the doors of Convention Hall were opened March 14 one thousand persons stood in the en-



GLENN FREEZE, ASSISTANT MANAGER CEMENT PRODUCTS EXHIBITION COMPANY.

trance foyer and out in the streets, waiting to get in. The crowd was patient and good natured, and when the doors opened the mass of people passed in quietly and in order.

At the opening of no previous show in the history of the industry had such an experience at the opening been noted.

Fifteen minutes after the opening every aisle was crowded, and at 8:30 o'clock the doors were closed. More than 2,000 were turned regretfully away. The crowd was so dense it was feared some would be injured, but happily nothing happened to mar the evening.

It was the most amazing scene ever witnessed in this amazing concrete business. It means that Kansas City, despite all stories told of her flirtations with other materials, has proven herself true to cement, as we have claimed for her all along.

The show was complete in every detail on the opening night, and none going down the aisles



ROBERT CRAWFORD, ASSISTANT SECRETARY CEMENT PRODUCTS EXHIBITION COMPANY.

would imagine that a few hours before the hall was a scene of busy confusion in preparation.

The remarkable success of this show is credited principally to the fact of its novelty in Kansas City, for it was the first show held there and the people took to it naturally.

As in all the other shows the crowds were interested in every display, whether of architectural construction or purely mechanical exhibits.

Among the visitors were many students from the Y. M. C. A. department of concrete construction. These are the future workers in concrete, the future buyers of machinery and cement.

J. P. Beck, manager of the show, who is now becoming a veteran in management, despite his young years, said the opening surpassed anything he has yet witnessed.

"I expected a big first night," he said, "but nothing like this." He was standing in the main aisle when the first crowd rushed in and was nearly swept off his feet. "It means that Kansas City is a winner," he said. "I always heard they were live people, but I never knew how hungry they really were to know all about concrete."

It is hard to say which exhibit interested the crowds most for the people were packed in so densely that no exhibit was neglected.

Notes of the Show.

C. D. Wright, sales manager of the Continental Portland Cement Company, was a caller at the show.

And then those steel forms for houses shown by Read & Morrill, Inc. They attracted more attention than ever.

Louis Stone, of the Hunt Engineering Co., was there. The Hunt Engineering Co. had an interesting and instructive exhibit.

P. C. Goble, representing the Jones & Laughlin Steel Co., of Pittsburgh, helped out the local reception committee.

J. A. Allen, representing the W. B. Jones Boiler Co., Streator, Ill., was at the show exhibiting the Heltzel System of steel forms.

Our old friend Browning, of the Standard Scale and Supply Company, says he will go to every Kansas City Show even if he has to walk.

J. P. Sprague Company, prominent building material and supply dealers of Kansas City, had an exhibit at the show.

C. H. Rose, of the Garden City Sand Company, returning from his vacation, spent a day at the show. "It's a good show," he said.

R. V. Allen, superintendent of the Monarch Portland Cement Co., Humboldt, Kans., also Frank D. Mathias, auditor of the company, were visitors at the show.

The Cowham System of Portland Cement Mills had the same exhibit that they had at Chicago. It was one of the handsomest examples of ornamental concrete work at the show.

"Long" Ed Sherrick, of the United Kansas, said if the worst should come to the worst, his early training following a mule and plow between the potato rows will be of use to him, because he is sure he can make an honest living that way.

One of the callers at the Universal Portland Cement Company's exhibit was George Rankin, Tarkio, Mo., who inherited from his father a 30,000-acre farm, 7,000 cattle and 12,000 hogs. All the corn raised on this vast farm is used to feed the stock. He intends to build concrete culverts, corn crib floors, etc., this season, and was much interested in the show.

R. M. Bates, the valve bag man, had a steamboat whistle, which he used upon occasion. Mr. Bates entered into the spirit of the show with all his accustomed enthusiasm.

Walter Smith, the Atlas' genial Iowa representative, has purchased a Curtiss biplane. Mr. Smith has never been known to go up in the air before and his friends are somewhat apprehensive over the results of his new venture. Walter expects to visit his trade next season in his biplane, thus saving much time.

W. E. Dunn, of the W. E. Dunn Manufacturing Co., Chicago, who exhibited their tile machine,

reported good business. This is one of the best tile machines on the market today.

The Eureka Machine Co. had one of their mixers in charge of L. A. Ferguson. The Eureka is handled in Kansas City, Denver and Oklahoma by the John Deere Plow Co.

The exhibit of the American Portland Cement Manufacturers attracted the crowds.

Roscoe Vaughan, of the Iola Portland Cement Company, the "White Man's Hope," was at the show resting up after his labors at the convention. He was registration clerk and everybody



F. E. GUY, TRAFFIC MANAGER, CEMENT PRODUCTS EXHIBITION COMPANY.

who came to the meetings was greeted first by the smiling Vaughan.

The Archaeological exhibit, consisting of specimens of concrete 2,000 years old, was one of the most interesting at the show. It consisted of pieces of concrete removed from the foundations of the Temple of Romulus, Roman Forum, by Alfred Hopkins, the well-known architect of New York City.



THREE LIVE ONES FROM NEW YORK (E. E. BUHLER, W. J. JOHNSON AND GEORGE HAUBITZER).

Typical Exhibits at the Kansas City Cement Show



STANDARD SCALE AND SUPPLY CO.



UNIVERSAL PORTLAND CEMENT COMPANY.



BATES VALVE BAG COMPANY.



UBBINK STEEL FORM COMPANY.



TRUSSWALL MFG. COMPANY.



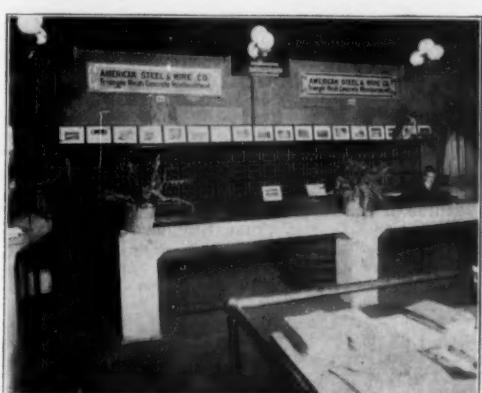
CARNEGIE STEEL COMPANY.



EDW. E. BUHLER COMPANY.



UNIVERSAL CRUSHER COMPANY.



AMERICAN STEEL & WIRE COMPANY.



CONCRETE SUPPLY COMPANY.



SIMPSON CEMENT MOLD COMPANY.

Side Talk

in which the Advertiser tells his own story.

THE STORY OF THE WHITE STRIP.

The development of any useful thing is seldom due to chance. The many public utilities which have become common to us through constant use, represent in the main years of labor and experiment and often a constant struggle against discouraging and almost unsurmountable obstacles.



FIG. 1.

(Cut the lap the same as for a 3-ply belt as shown in the above cut. Scrape rawhide lap thin so as to be pliable, then cover the laps with two coats of Sea Lion cement, letting the first coat dry thoroughly before applying the second, then letting the second coat also stand until it is perfectly dry.)

A number of years ago a little group of men conceived the idea of developing a type of belting for power transmission that would be free from all of the faults of belting which has been in use since this method of transmission was first evolved. Experiments and tests were carried on in secret, and time after time success seemed almost in sight, but always some unforeseen defect undid the work, and necessitated a new beginning.

Finally a belt was built that stood all laboratory



FIG. 2.

(Punch holes with small pegging awl in the rawhide lap as indicated above where rawhide is to be cemented to rawhide.)

tests, and the arduous series of experiments seemed at an end, and the work of putting it on the market was undertaken, and carried on for a time.

After belts were actually put in operation, it was found, that while some would run with remarkable efficiency, others would not be up to the prescribed standard. This was due to the fact that the proper cement was not being used, although the best procurable at that time.

Here the matter rested, waiting until a perfect cement would be found. Three or four years ago



FIG. 3.

(The final operation is indicated in the above cut. Use one coating of cement on one lap only, rubbing the brush to remove all surplus cement, as too much will soften the other two coats.)

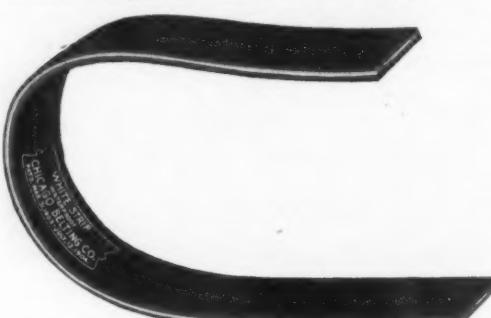


FIG. 4.

(Put the lap under pressure immediately, using blocks and thumb screws as shown above, but do not rub the lap.)

tests were recommended, using Sea Lion Cement, and after running several belts under conditions that would more than tax the wearing properties of ordinary leather belting, it was discovered that this cement was the long sought for link, connecting probability to certainty, and that no matter what the condition the cement held.

During these years, belts have been run in places where ordinary leather belting would not last, and without a single known instance of failure.



THE WHITE STRIP.

Such is the story of the WHITE STRIP Stretchless Belt, made by the Chicago Belting Company, under their patents.

A description of this belt is interesting in view of the remarkable properties it possesses.

The principle of construction rests on the use of a strip of specially treated hard, dry rawhide between two outer plies of leather. Tests for tensile strength show that the breaking strain of this White Strip of dry rawhide is from 15,000 to 19,000 pounds per square inch of area. When we stop to think that the breaking strain of 3-16-inch leather is about 4,000 to 6,000 pounds, the wonderful strength of the White Strip is fully realized. Added to this strength are the two outer plies of leather, so that WHITE STRIP Stretchless Belt, while about the same thickness as double leather, has a greater tensile strength than 3-ply leather, and yet the cost is only slightly above that of double belting.

This White Strip of rawhide is prepared by a special patented process. It is non-stretchable, having only the necessary elasticity to make it a perfect transmission medium when inserted between two plies of leather. Being put together with SEA LION Cement, it is absolutely waterproof.

Making belts endless is not a difficult task for any experienced mill man, but the method of making WHITE STRIP Belts endless is more complicated. The following four cuts illustrate the methods used, and by following the instructions carefully any competent belt man can put a WHITE STRIP Belt on the pulleys endless without difficulty.

The Sandusky Portland Cement Co., Sandusky, Ohio, recently received an order for 100,000 pounds of Medusa waterproofing for use in the New York Dock Company's job at Atlantic Basin, Brooklyn; 5,000 barrels of Medusa waterproofed white Portland cement for use in the Woolworth building, New York City; 25,000 barrels of Medusa gray cement for use in the Central High School building, Minneapolis, and 3,000 barrels of Medusa white Portland cement for use in the same building.

The firm of Farly, Koch & Co., which has been doing business at 4601 Armitage avenue, Chicago, has been dissolved. Paul E. Lambe and M. Koch, formerly with Farly, Koch & Company, have taken over the business and are continuing it under the name of Koch & Lambe, doing a general builders' supply business.

WHITE PORTLAND CEMENT FOR INTERIOR PLASTER.

One of the most interesting specimens at the New York cement show this year was a plaster slab 24x16 inches, that was shown at the exhibit of the Monarch Mining Company of Jersey City, N. J. This plaster slab aroused considerable enthusiasm among expert plasterers from New York and Boston and as far west as San Diego, Cal., which fully showed in a practical way the marked possibilities of a pure white Portland cement as a hard finish for interior plaster when floated under a steel trowel, and an article that will withstand water, fire and frost and still fulfill the wishes of our leading architects by producing a highly finished surface. Similar results have been obtained by casting on glass and other smooth surfaces and very satisfactory results have been obtained by the use of Keene's cement; but to be able to produce this effect by the troweling of a standard Portland cement is not generally believed as possible or practical by experts, but this slab proves beyond question the possibilities of a white Portland cement for either interior or exterior work where artistic effects are required.

A small piece of this slab was broken off and given to a representative of ROCK PRODUCTS, who can vouch for its strength and surprisingly hard finish. It withstood blows of greater force than that required by marble or granite before it was severed from the original piece. This sample, which shows an absolutely smooth and almost polished surface with a pleasing marble effect, was produced under the personal supervision of Mr. E. J. Alferice, foreman for the Interborough Rapid Transit Company of New York City. It can be worked equally successfully with brighter colors, or a clear white may be obtained if so desired, as samples laid up on the rough walls of the store room at Bowring Green station in New York City will show.

This plaster slab was obtained by mixing 1 part of Medusa white Portland cement, 2 parts of clean sand (if clear white is desired use marble dust) and applied $\frac{3}{4}$ of an inch thick as a base, leaving the surface rough to insure a bond for the finish coat, which is as follows: 1 part Medusa white cement, 1 part very fine marble dust, 10 per cent of entire mix of hydrated lime. Apply same in a thin coat and finish with a steel trowel. This will produce a perfectly smooth hard surface, equal to the cost interior plasters at the approximate cost of material for the finish coat of 12 cents per square yard for every $\frac{1}{8}$ of an inch in thickness.

The color effect was brought about by the dipping of silk threads into the color desired and passing over the face after the final troweling. To insure clear lines do not attempt to trowel after the color has been applied.

The same results can be obtained by the use of 1 part gray cement to 2 parts of clean sand for a scratch coat, with a second coat $\frac{1}{4}$ of an inch thick of 1 part Medusa white cement and two parts marble dust, and finish coat as before mentioned.

By the use of Medusa waterproofed white Portland cement, in other words, Medusa waterproofing ground with the white cement at their mill, and a new feature in this cement age, it was found possible to secure an absolutely waterproof finish, that will resist water even under pressure. This was demonstrated by the laying up of a similar slab by the same party, and was also on exhibition.

The above will appeal to all architects and ornamental plasterers for use on the walls of hospitals, churches, schools, hotels, kitchens, laundries, baths, subways, swimming pools, gymnasiums, etc. Many a fine and elaborately decorated wall on the interior of a church or hotel has unsightly stains caused by the dampness striking through the plaster and there has seemed no permanent remedy.

This article shows new possibilities in the cement field and is worthy the attention of every one interested in enduring artistic finishes.

A booklet of especial interest being circulated generally to the trade is that of the Longest Bros. Company, Inc., Louisville, Ky. It furnishes a detailed account of the construction of the automobile trucks manufactured by that concern and is quite comprehensive in pointing out the technical features of the trucks. The "Longest Trucks" are manufactured in two types, Standard and Special, in both three and five-ton sizes. The special type is designed for those requiring an unusually large carrying space.

For Electric Hoists.

Contract has been awarded by the Secretary of the Interior to the American Hoist and Derrick Company of St. Paul, Minnesota, for furnishing four electric hoists and derricks for use in the work of construction on the Arrowrock dam, Boise irrigation project, Idaho. The price for this equipment as quoted by the successful bidder is \$14,836.91.

MARCH 22, 1912

UNITED WIRE TIE CO.

The United Wire Tie Company, of Toledo, Ohio, has a very handy device for the convenience of



METHOD OF TYING.

all manufacturers who use bags for shipping its product. It is a wire tie with which one man can readily tie at the rate of 500 bags an hour without any special effort, a light spirit twister being used



SHOWING BAG TIED.

that is easily operated. It is something that every cement manufacturer and plaster man should be interested in. Circulars will be sent on application.

The world is rapidly progressing in all lines. Simplicity and speed in operation is the keynote of the day, also the devices that do away with former troubles. The time is not far distant when there will be but little use for string and twine for the tying of bags, for all purposes. Wire ties are secure, inexpensive and rapid. The cuts show a small portion of the operation; they show the method of operation by hand.

The above company also manufactures an automatic machine, which takes the wire directly from the reel and ties the bags automatically at the rate of thirty per minute. Any boy can operate the machine. The company's plant has a capacity of one-half million wire ties daily. A large percentage of the wire ties in question are manufactured for reinforcing purposes—in tying together reinforcing rods—which is a great saving in time and labor.

The Abraham-Porter Construction Company, of Moline, Ill., was awarded \$10,740 concrete sidewalk contract in East Moline, Ill.

Frank Hawley, of Urbana, Ill., was awarded the contract for concrete work on the Kankakee-Urbana electric railway for \$6.27 a cubic yard.

ROCK PRODUCTS

GREAT SCENIC BOULEVARD.

A scenic boulevard on so elaborate a scale that it may ultimately pass under government jurisdiction and be maintained as a national asset, like the Yosemite and Yellowstone National Parks, is a part of a plan to beautify San Francisco so that the city will present an exposition effect when the Panama-Pacific International Exposition opens in 1915. The boulevard is the most important single feature of an architectural plan in which millions of dollars will be expended in creating an exposition city, so that the moment a visitor reaches San Francisco he will actually be in the exposition itself.

The superb scenic boulevard will be the most remarkable feature of the exposition city. It will encircle San Francisco on two sides, bordering San Francisco harbor, and paralleling the Pacific ocean, thus connecting the principal parts of the Exposition. The boulevard was first proposed for San Francisco in 1904 by D. H. Burnham, directing architect of the Columbian Exposition at Chicago. It was part of a general plan to take the fullest advantage of San Francisco's hills and harbor, and also to improve the business sections. The latter plan was to be effected through the establishment of a civic center in the heart of the city, from which the principal streets should radiate, and the former through the adornment of conspicuous landmarks like Telegraph Hill and Twin Peaks, and the improvement of the parks and the water front.

Through San Francisco, the city of the exposition, a new avenue will lead from one center of the Exposition to another. In no exposition which the world has seen has there been such an avenue. The boulevard will run beside one of the few great harbors of the world, and beside the world's greatest ocean as well. It will connect great military posts and beautiful municipal parks; it will pass by elegant homes, by busy shipping, under palms and pines, near great engines of war guarding the approach to a nation, through the forests of the Presidio, the nation's most beautiful and perhaps most important military post, until, at last, having encircled the city, in its course of eight miles, will come to an end in Golden Gate Park.

The Ricketson Mineral Paint Works, Milwaukee, Wis., has just issued a little bulletin under the title of "Tricks of the Trade." In it are contained general directions and suggestions for acquiring odd shades, which are liable to be in demand in these days with all the fancy brick on the market which requires color to match them. A casual glance at the title of this pamphlet would indicate that it should be a very valuable acquisition to the library of trade literature of those interested in paints, and all you have to do to obtain a copy of same is to write the Ricketson Mineral Paint Works and say you saw it in Rock Products, and a copy will be mailed you promptly.

The C. O. Bartlett & Snow Company, Cleveland, Ohio, has increased its capitalization to \$500,000. The increased capital will provide for some enlargements and extensions of the company's business, which includes, among various kinds, the manufacture of crushed stone and sand and gravel machinery and washing plant equipment. C. O. Bartlett is president and treasurer of the company; E. J. Neville is first vice-president and general manager; H. H. Bighouse is second vice-president; H. L. McKinnon is third vice-president, and I. M. Snow is treasurer.

The Great Northern Concrete Company, of Milwaukee, Wis., by its president, John R. Dupont, has filed a voluntary petition in bankruptcy. The liabilities are given as \$45,218, assets \$8,873, of which the greater part is machinery.

The Electro-Concrete Fence Post and Steel Ladder Company, of Waterloo, Iowa, has been incorporated with an authorized capital of \$240,000. The new corporation is a merger of the Electric-Concrete Fence Post Company and the Utility Steel Ladder Company. One of the chief outputs will be the molds by which the electro-concrete post designs for ground lightning bolts. The officers of the company are as follows: President, John Sims, Waterloo; vice-president, William H. Wright, Bathgate, N. D.; secretary, W. C. Wright, Waterloo; treasurer, Fred H. Golly, Marshalltown; general manager, T. H. Churchill, Toronto, Canada; attorney, J. E. Williams, Waterloo.

The Barnet & Record Company, of Minneapolis, Minn., has been awarded contracts for the erection of a reinforced concrete grain warehouse for the Kansas Milling Company, Wichita, Kan., and one for the J. C. Lyle Milling Company, Leavenworth, Kan. Each will hold 240,000 bushels.

CONCRETE COTTAGES.

The Atlas Portland Cement Company has come to the front again, as it usually does, with a new publication on house construction, called "Concrete Cottages." The book contains pictures and plans of cottages of the most recent and up-to-date designs. What makes the book of special value is the fact that these houses and the plans of them are all of moderate cost, such as the man of ordinary means ought to be able to build. There has been a demand for designs of this character, and the book ought to be in the hands of every dealer who sells cement, as it contains suggestions that he will be able to give to the intending builder, and incidentally help him in selling more cement. The trouble with most books on cement construction is that they involve an outlay of more money than the ordinary man is able to put in a residence. All these houses, while artistic and beautiful, could be built by even wage earners. Tell the Atlas Company to send you one.

PURCHASES NEW HOME.

The Lansing Company of Lansing, Michigan, recently purchased the entire Hoist building plant of the Butcher & Gage Co., Jackson, Mich., and in the future will manufacture the Wolverine Hoists in Lansing. Their standard hoist is a single drum contractors' hoist, and capable of moving a 3,000 pound load 55 ft. per minute.

These hoists are extensively used by contractors and miners; also for loading, unloading and pulling cars; loading and unloading boats at docks; ditching and dredging with scrapers; pile driving and well digging.

The hoist is fitted with a drum for rope or wire cable. This drum is 13 inches between the flanges. The flanges are 20 inches in diameter. The hoist has a friction clutch and gear with cut teeth for hoisting and a reverse motion at twice the speed of the hoisting. The hoist is equipped with a powerful foot brake, which will hold any load up to the capacity of the hoist. The snubbing drum will handle any piece usually found in any building. The hoist is equipped with engine gear for either 3, 4, or 6 H. P. engine, as ordered.

TECHNOLOGY PROBLEMS.

We have received a booklet issued by the Institute of Industrial Research of Washington, which has for its purpose the study of the problems of technology, and to train and instruct graduates of scientific schools in industrial research. The Institute issues from time to time bulletins containing the results of investigations that ought to be of great value to all persons interested in the manufacture, sale or use of building materials.

The Monarch Mining Company, with headquarters at Jersey City, N. J., make a specialty of their natural granite, which is crushed and screened into numerous sizes for concrete work. They are one of the few firms making a specialty of crushed granite for concrete work, which is the exclusive product of their kind. They do not turn out any natural stone at all, but put all their efforts into the crushed material.

One of the most interesting specimens at the New York Show was a plaster slab 24x16 inches, shown by this company. The slab aroused considerable interest among plasterers and showed the marked possibilities of a pure white Portland cement as a hard finish for interior plaster when floated under a steel trowel.

The Cleveland Material Company, which is under the leadership of W. P. Hurst, is, as usual, sending out very attractive advertising matter which stays with the customers.

C. F. Nordstrom & Son, Harrison Avenue, Rockford, Ill., had an exhibit of poured waterproof cement building and silo blocks and fancy residence columns at the "Made in Rockford" show in that city recently.

The contents and fixtures of the office of McCutcheon & Shahan, cement contractors of New Sharon, were destroyed by fire February 27. Lon Shahan, a member of the firm, was sleeping in the office and had a narrow escape.

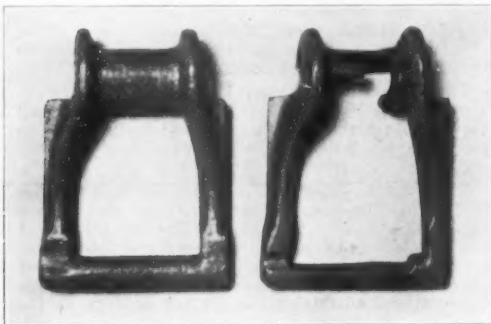
The Hanford Irrigation and Power Company will cement a mile of its irrigation canal this year. It will make eleven miles of cement lined canal.

H. Erlon and A. F. Filkins will open a factory in Canton, Ill., for making concrete blocks.

MANGANESE STEEL ELEVATOR CHAIN.

In connection with the rapidly increasing use of manganese steel chain in cement and rock crushing plants, the accompanying cut is very interesting. It shows a link of No. 103 malleable chain and a link of Tisco manganese steel No. 103 chain, which were placed in a line of chain at the same time. A glance will show how the malleable link is completely worn out, while the manganese link is not worn at all, merely has taken on a slight polish.

The question is often raised as to how much longer manganese chain will wear than malleable chain. It is hard to answer this question in a single statement, as manganese wears so much longer than any other material that it is almost impossible to get data on the comparative wear except in those installations where the wear is extremely severe. As an illustration of the comparative wear one of the cement plants equipped an elevator with manganese steel chain in December, 1909, on which the ordinary chain gave out completely, and had to be replaced on an average of every five months. To date the manganese steel chain has been in place approximately twenty-six months and during this time has given over twenty-five full months of



AN INTERESTING COMPARISON.

service with no trouble or breakdowns of any kind. In spite of the remarkable service rendered by this manganese steel chain, it is still in perfect condition, showing no signs of wear, and, in all probability, will wear as long again. In this severe application the manganese steel chain has already given a service comparison of five to one over the ordinary chain, and before giving out will render a service of ten to one, as compared with the ordinary chain, which is not at all unusual.

Another cement plant replaced a malleable drive chain with manganese chain on August 1st, 1911. The best they were able to get out of the malleable chain was 10 days' wear. On February 14th, the manganese chain was still running and showed very little signs of wear. This installation shows a life of 198 days plus, with hardly any signs of wear, for the manganese chain, as against a maximum of 10 days for the malleable chain.

These chains were made by the Taylor Iron & Steel Co., who not only are the oldest makers of manganese steel in the United States, but always are in the lead in adapting this wear resisting steel to new applications. In line with their progressive policy they have added a new department to their plant at High Bridge, New Jersey, to handle the chain work exclusively. This new equipment has enabled them to reduce their manufacturing costs and following the usual policy of giving their customers the advantages of all reductions in manufacturing costs, they have made a cut in the prices of their well known Tisco manganese steel chain. These reduced prices may be had on application.

The second annual New York Architecture and Engineering Exhibition, which was to be held from March 25th to 30th, has been merged with, and will be held in conjunction with the Fire Exposition, October 2nd to 12th, constituting a department of fireproof construction and safety building equipment.

The Builders' Exchange of Minneapolis, Minn., will open a credit bureau covering all lines of business relating to the construction of buildings. An employment bureau has been opened.

The General Contractors' Association announces the removal of its offices to 51 Chambers street, New York City, N. Y. In their new location they will have increased accommodations and facilities provided for members, who are cordially invited to make the new offices their rendezvous for the transaction of business. C. A. Crane is the secretary of the association.

HAVE ST. LOUIS OFFICE.

In order that its customers may secure more direct and personal service from its engineering department, the Stephens-Adamson Manufacturing Company have adopted the policy of establishing branch



J. J. FASMER.

engineering and sales offices in various parts of the country. These offices are under the direct charge of competent conveying engineers, who are thoroughly familiar with the methods of this company, and with the various problems that arise in the handling and screening of material.

In accordance with this policy, and after numerous requests from customers in that territory, they have recently opened an office at 803 New Bank of Commerce Building, St. Louis, Mo. This office is under the management of J. J. Fasmer, formerly general superintendent of the shops. Mr. Fasmer has been employed by the company for eleven years, and is thoroughly familiar with all branches of the business. He has been employed in the sales and engineering departments of the home office, and in various capacities he has gained a thorough knowledge of the details and applications of "S-A" conveying machinery, and he has proven himself exceptionally fitted to serve the interests of customers in the territory about St. Louis. Inquiries from that territory will thus receive more prompt attention, if directed to the St. Louis office, as well as the personal services of a competent engineer.

Although it is necessary to maintain separate offices throughout the country, the closest harmony exists between the home office and its branches, and all managers of branch offices are members of the engineering department.

INTERESTING BOOKLETS.

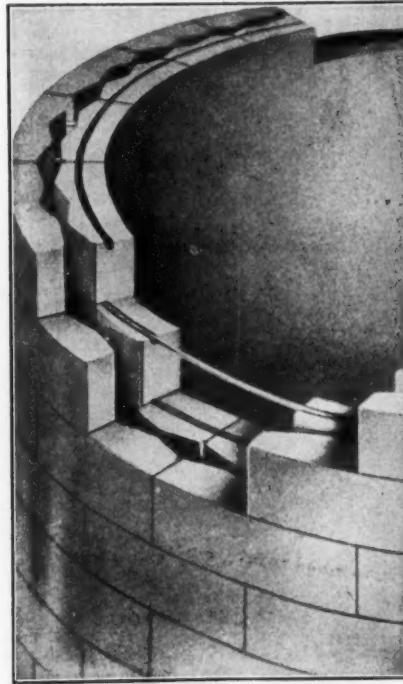
Robt. W. Hunt & Company, designing and consulting engineers, Chicago and New York, and with offices in many of the principal cities in the United States and in England, Canada, Buenos Ayres and Mexico, are sending out to their clientele and to the trade in general some interesting literature bearing on the subjects of inspection, tests and consultation. The company has also issued some very interesting booklets having to do with the testing of cement, and which contain information of unquestionable value and importance to contractors and others interested in concrete buildings. The subjects treated include the technical features of cement manufacture, and in addition a portion of the booklet is devoted to cement mill engineering and the preparation of plans and specifications for Portland cement mills, including power plants, raw material, machinery, etc., of which the company is in position to furnish a detailed report of the cost of construction, and an estimated cost of cement production.

We would suggest to our readers who are interested in this field the advisability of sending for these two booklets, which may be secured by writing to Robt. W. Hunt & Company, 1121 The Rookery, Chicago, or 90 West street, New York City, N. Y.

The Ruggles-Coles Engineering Co., 50 Church street, New York City, and McCormick Building, Chicago, have appointed the London Concrete Machinery Co., London, Ont., as their agents for the sale of the Ruggles-Coles portable dryer and heater for road work.

ANCHOR BLOCKS.

There has lately been placed on the market by the manufacturers, the Anchor Concrete Stone Company, Rock Rapids, Ia., a new power tamper, which promises to do much to increase the output of concrete blocks per day. The tamper is suspended over the block machine, and therefore occupies no floor space at all. The eight tamping arms are enclosed in a dustproof case and are raised by roller



ANCHOR CONCRETE BLOCKS.

crank arms, each tamper striking the concrete 75 separate blows of 600 pounds per minute. Each tamper drops 18 inches in striking and when the brake is applied the tampers rise to a level of 16 inches above the mold box, to allow removal of the block. It is comparatively noiseless and, it is claimed by the inventor, will turn out from 400 to 500 blocks per day.

THE L. L. GRIFFITHS ENGINEERING CO.

We are pleased to record for the information of our readers the organization of the L. L. Griffiths Engineering Company, Room 708 Trust building, Dallas, Texas, of which L. L. Griffiths is president and O. C. Brooks is secretary. These gentlemen have had many years' experience in mechanical engineering in all its varied branches and are fully capable of performing, to a thorough degree, any duties assigned to their care.

L. L. Griffiths was, for the past three years, general manager of the Texas Portland Cement Company, and is retained by them as consulting engineer. Prior to that time he had an all-around experience in the prosecution of his profession and has served a number of the most prominent firms in the United States.

O. C. Brooks has also had a broad experience in this capacity, his operations extending backward over a period of fifteen years.

The L. L. Griffiths Engineering Company tender their services to the underwriter and banker, the architect, owner, contractor or municipality, and are prepared to design and superintend the construction of gas and steam power plants, hydro electric and irrigation plants, machine shops, foundries, cane sugar mills, cement and other manufacturing plants.

ROCK PRODUCTS joins the host of friends of Messrs. Griffiths and Brooks in wishing them the fullest measure of success in the field in which they have embarked and in which they are so ably fitted.

"Drill Work, Methods and Cost" is the title of a book just issued by The Cyclone Drill Company, Orrville, Ohio. It contains 350 pages of drill information and kindred subjects.

The object in view in producing this book was to cover a great desire on the part of the drill men to get instructions as complete as possible to cover drilling operations in all its branches, beginning with the setting up of the drill with complete instructions, step by step through all the operations necessary to complete wells, prospect and blast holes in various kinds of material, installing pumps and giving them the advantage of a great many kinks in the business which have been gathered by years of practical experience in the field and by coming in contact with hundreds of customers.

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Equipment for Sale at Centreville, Tennessee

Ready for Immediate Shipment

Locomotive, 36" Gauge.

Grant 12x16 Saddle Tank, 20 ton; 7'0" wheel base; 2½" tires; vacuum brake. Overhauled—cleaned—painted—entire new cab.

Dump Cars.

11 Atlas, 36" gauge, 2 yd. capacity, cradle side dump steel cars with link and pin couplers. Equal to new; repainted.

2 Atlas, 36" gauge, 4 yd. capacity, bottom dump cars—also steel. All repainted.

Drills, Boilers, and Engines.

2 Ingersoll-Sergeant 3" Air Drills, or steam, with tripods and weights or tunnel columns.

2 Nagle, 30 H. P., firebox boilers on skids. Each is 36" diameter waist x 14' long; dome 20x22; firebox 54" long x 31" wide x 26" high. 34—3" new tubes 96" long. All fittings new; complete except stack.

One Ball Automatic, horizontal Left Hand Steam Engine, new; cylinder 18x20; shaft 12' long; with 3 band wheels 6 ft. in diameter x 18" face; 10" bore; ring 2¾" thick; 6 spokes; hub 18" diameter. Fine condition.

125 Light Dynamo, belted, with marble switch board and ammeters complete.

One Freeman Dynamo Engine, vertical, 6x8 cylinder, 2 7/16 shaft; with fly wheel 26" diameter and band wheel 26"; shaft 38" long; bed 30"x36".

Friction Drum Hoisting Engines.

Lidgerwood, horizontal, double cylinders, 6 1/4" x 8", one drum 21" in diameter x 16" face; with foot brake, winch, trimmings complete (no boiler).

Samson, vertical, 7" x 8" single cylinder; one drum 20" in diameter x 18" face; with winch, foot brake, etc., as above.

Freeman, vertical, 6" x 8" single cylinder; one drum 20" in diameter x 18" face; complete as above.

Pumps.

Platt Iron Works, 6x4x6, duplex, No. 52534; steel rods; 3" suction, 2" discharge.

Snow, 4 1/2 x 2 1/2 x 4, duplex, No. 70214; steel rods; 2" suction, 1 1/2" discharge.

Air Compressor.

Norwalk, tandem compound, shop No. 1566, code name "Xlist." Steam 12", intake air 14", compressing cylinder 9 1/2"—all cylinders 12" strokes. Capacity 390' per minute to 115 lbs. Air receiver 36" x 72". Outfit complete and like new.

Kent Mill.

One Kent style "G" Pulverizer with feed hopper, complete, No. 245. Condition equal to new. One Richardson Scale Company's automatic bagging machine and scale, No. 2269; fitted with 2 feed chutes and cutoff gates. Chutes arranged on carriage so as to handle either lumpy or powdered rock as desired. Practically new.

One Kent style "G" Pulverizer with feed hopper, complete, No. 245. Condition equal to new. One Richardson Scale Company's automatic bagging machine and scale, No. 2269; fitted with 2 feed chutes and cutoff gates. Chutes arranged on carriage so as to handle either lumpy or powdered rock as desired. Practically new.

Stone Crusher Outfit.

1 No. 5 Austin Gyratory Crusher, No. 2211. Left Hand angle drive. Corrugated chilled iron head (set to crush to 2"). Babbitting sleeve, mandrel, wrenches, etc.

1 No. 3 Austin Gyratory Crusher, Right Hand angle drive; smooth chilled iron head (set to crush to ¾").

1 No. 5 Austin Elevator, 50 ft. centers complete with 15"x8" buckets on 16" canvas stitched Gandy belt.

1 Austin Rotary Screen 40" diameter x 10 ft. long, with 1" perforations. Crusher, Elevator & Screen

1 Austin Rotary Screen 30" diameter x 9 ft. long, with 1/2" perforations and dust jacket.

1 No. 5 Austin Elevator, 35 ft. centers, complete

Link Chain Elevator, 70' centers, buckets 8"x5". Jeffrey Screen, shaking screen (wood frame). Newaygo Screen, shaking screen (iron frame).

1 Line Shaft, 34 ft., pulleys, post hangers, and bearings, 4 15/16".

NOTE—ALL of this machinery is new or relatively so; none of it used but a few months; has been stored under cover, properly cared for, and we guarantee its good physical condition.

We have a representative on the ground who will show it to prospective buyers.

Will Make Attractive Prices in Order to Move Promptly

Willis Shaw Machinery Company
39 South La Salle Street, Chicago, Ill.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

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No display except the headings can be admitted.

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EMPLOYEES WANTED**WANTED.**

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you will create one for you.

EXPERIENCED MAN.

Wanted—Experienced man who has knowledge of formulas for making sand and neat hard plaster to manage material department sales; also general experience with cement lime and sundry building material. Address A. B. MEYER & COMPANY, Indianapolis, Ind., stating salary and former or present employment.

MANAGER.

Wanted—Experienced man to manage established crushed stone and building material business, in excellent city to live. Permanent position to right man financially interested in company. Address JONES, care ROCK PRODUCTS.

FOREMAN WANTED.

Wanted—An experienced foreman for rock quarry and crushing plant. Must be familiar with steam shovel work. State experience in detail. Also age and salary expected. Address "W.", care ROCK PRODUCTS.

EMPLOYMENT WANTED**SALES—ENGINEER.**

An exceptionally good man with engineering, sales and executive experience—one with initiative—is considering a change. This is a rare opportunity. Get busy.

Address 834, care ROCK PRODUCTS.

MATERIAL FOR SALE**THE BEAL CORE DRILL.**

The best, cheapest and most effective core drill for testing quarries, coal and mineral lands. Brings a solid core, from 2 to 4 inches in diameter to the surface, showing the different formations it passes through. Records of each hole furnished. Correspondence solicited.

Addres

EDWIN S. BEAL,
214 Woodlawn Ave., Lansing, Mich.

NOTICE.

I have a complete outfit of Miracle Double Air Space Cement Block Machinery, to furnish a complete house, for sale. Only used for one building. Worth \$400.00. Will sell at \$150.00.

A. J. TRUWE, Hamburg, Minn.

THEW SHOVEL.

For Sale—No. 8, overhauled, first class shape. Also narrow and standard gauge locomotives. Address Southern Iron & Equipment Co., Atlanta, Ga.

MACHINERY FOR SALE**FOR SALE.**

- 1 Ide Engine 20"x24".
- 1 Skinner Engine 18"x18".
- 3 Porter Center Crank Engines 9".
- 6 Boilers 50"x22 feet 12"-6" flues.
- 2 Boilers 50"x18 feet 12"-6" flues.
- 4 Boilers 50"x22 feet 12"-5" flues.
- 1 Cameron Pump 1 1/4" discharge.
- 2 Heald and Sisco Pumps No. 6.
- 1 Ingersoll Drill 3 1/2".
- 6 J. C. Clark Pulverizers.
- 1 H. K. Porter Locomotive 39 1/4" gauge.
- 1 Rand Straight Line Air Compressor.
- 1 Dodge "Eureka" Water Softener.

Address UNION CEMENT & LIME CO., Louisville, Ky.

MATERIAL WANTED**STEAM SHOVEL TO LEASE.**

Sand and gravel company wishes to lease a small steam shovel fully equipped. Give full particulars and best terms.

Address 833, care ROCK PRODUCTS.

MACHINERY WANTED**LOCOMOTIVE.**

Wanted—Locomotive in good condition, 30" gauge. Also six steel 2-yard side dump cars. Address York Sand & Gravel Co., East Toronto, Ont., Canada.

PLANT FOR SALE**FULLY EQUIPPED PLASTER MILL TOGETHER WITH LARGE DEPOSITS OF PURE GYPSUM AND LARGE ACREAGE OF GYPSITE.**

The Red Buttes Wyoming Plaster Mill, together with 262 acres of deeded land, covering the only available pure Gypsum deposit in the State of Wyoming, and an almost inexhaustable deposit of fine quality gypsum plaster from same having taken the award at the Chicago World's Fair, can be purchased at a very reasonable figure. Mill is in full operation and under proper management would prove a most remunerative business. Owners, however, cannot devote their individual attention to it, and are willing to dispose of the entire property to some one who can. Full particulars can be obtained from the Western Building Material Manufacturing Company, Carey Block, Cheyenne, Wyoming.

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For Sale—Stone crushing plant, located in the western part of Illinois, on C. & A. R. R. Two crushers and unlimited quantity of stone.

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Rare opportunity to lease cement plaster mill for 20 years at 6% on actual value. In perfect operation with material to last 500 years. Big market for output. No competition. 50% profit. Location Southwest. Responsible parties only.

Address OWNER, care ROCK PRODUCTS.

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I have for sale for a limited time a block of stock in the Consolidated Concrete Tie Company, incorporated under the laws of Illinois, for \$100,000, fully paid and non-assessable. This stock is in \$10.00 shares.

The ties are in the I. C. R. R. where they have been for two years, and a car load is awaiting weather to be placed in tracks at Carbondale. All railroad officials who have seen them endorse their use. A good investment. Will sell for a limited time stock from one share to ten. If stock taken when remittance received will return money.

Send with application for stock a small payment, to show good faith. Remember, this is a private block of stock and may be withdrawn at any time. Address all communications.

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Pulaski, Ill.

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Additional capital wanted. A splendid opportunity for \$10,000 to obtain an interest in an established, well equipped sand lime brick plant, eight miles from Philadelphia on Pennsylvania railroad.

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Special reports made on Quarries and Plants not producing results.

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Consulting Engineer and German Cement Expert

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USE NEPHI PLASTER
THE DEPENDABLE BRAND

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on Fine Property only Forty Miles from Pittsburg, on the Pennsylvania Railroad, containing two veins of excellent fire-clay; one vein of fine shale; and one immense vein of white silica sand rock,— all accessible by drift mining. Low freight rates; plenty of Coal, Lime and Natural Gas. Running water. Nice town already built, with several large plants in regular operation. Liberal terms to good parties. Correspondence Solicited.

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601 Second National Bank Building, Pittsburgh, Pa.

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The raw materials of kaolin, ball clay, stoneware clay, slip clay, magger clay, feldspar, and silica are all found in various parts of the Southeastern States in ample quantities to supply the largest possible demands. Fuel is ample and cheaply supplied in the Southeast. In 1906 the U. S. Geological Survey estimated that the four states of Georgia, Alabama, Tennessee, and Kentucky contained an available supply of coal totaling over 69-billion tons, and the average price at the mine in 1909 for the four states was \$1.15 per ton, the fuel and coking values of this coal being unsurpassed. Natural gas is also available in some sections at extremely reasonable rates. Close investigation will satisfy interested parties that the Southeast is the best location for such industries. Write M. V. RICHARDS, Land and Industrial Agent, or CHAS. S. CHASE, Agent, Room 702 Chemical Bldg., St. Louis, Mo.

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General Offices, Exchange Bldg., Memphis, Tenn.

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We build municipal street work, turnpikes and give attention to all construction work of a similar character. Our organization is backed by twenty-five years experience, and we are in a position to furnish specifications and estimates promptly. Individuals, Corporations or Municipal authorities are invited to correspond with us.

MARCH 22, 1912

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"The Public Be Pleased"**CALVERT MORTAR COLORS**

Sold to Dealers Only

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BALTIMORE, MARYLAND

Write for Our COLOR Barometer

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Must be in this office by the Fifteenth of the month, if proofs are desired; if no proofs are required the desired changes can be made if copy is received by noon of the Nineteenth.

New Advertisements

To insure proper classification, should be in this office by the Fifteenth of the month, but they can be inserted in the last form going to press if received by the Nineteenth. The punctual publication of the paper admits no deviation from these rules. Advertisers are earnestly requested to co-operate with us.

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537 South Dearborn Street, Chicago, Ill.

**THE HENRY MARTIN BRICK
MACHINE MFG. CO.
LANCASTER, PENNA.**

ROCK CRUSHING MACHINERY
BRICK-MAKING MACHINERY
CLAY - WORKING APPLIANCES
CEMENT BRICK
MACHINERY
SAND GRINDING
MACHINERY
SAND DRYERS, BRICK DRYERS, ETC

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For Mortar, Cement and Brick
Brown, Black, Red and Buff
Strongest and Most Durable

Manufactured by **C. K. Williams & Co.**
Correspondence Solicited
Easton, Pa., U.S.A.



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CARS
FOR
QUARRIES
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CARS
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QUARRIES
An extremely heavy skip. Length, 10 feet; width, 4 feet; depth, 4 feet
3 inches; all inside dimensions. Capacity 165 cubic feet.
We Build Every Type of Car that Quarry Work Demands.
Get Booklet "Some Car Suggestions."
"K & J" Cars are built for "Continuous Service."
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One No. 3 Style "D" Gates Crusher.
Two No. 3 McCully Crushers manganese fitted.
Two No. 5 McCully Crushers manganese fitted.
Two No. 6 Style "D" Gates Crushers.
Four No. 6 Style "K" Gates Crushers.
One No. 10 McCully Crusher.
One No. 21 Style "K" Gates Crusher.
One No. 3 Austin Stone Screen and Elevator.
One No. 5 Austin Stone Screen and Elevator.

Six 2-yard Steel Quarry Cars, end dump.
One Complete No. 8 Crushing Plant.
One 6½ x 10 American Hoisting Engine D. C. D. D.
One No. 0 Thew Shovel with ½-yard dipper.
One Model 20 Marion Shovel, with 1½-yard dipper.
One 70-ton Vulcan Shovel.
One 95-ton Bucyrus Shovel.
One 10-ton McMyler Locomotive Crane.
Two 20-ton McMyler Locomotive Cranes, 8 wheels.

Write for Our December Bulletin of Bargains in Heavy Equipment Before You Buy. A Postal-Card Brings It.

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West Jersey Bag Co., The

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United Wire Tie Co.

BAG PRINTERS.
Kochler Co., Hy. L.

BELTING.
American Fabric Belting Co.
Chicago Belting Co.
Gandy Belting Co.
Link-Belt Co.
Stephens-Adamson Mfg. Co.
Webster Mfg. Company.

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Kilbourne & Jacobs Mfg. Co.

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Martin-Henry Brick Machine Mfg. Co.

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Fowler & Pay.

CEMENT MCHY.

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American Pulverizer Co.
Bonnot Co., The
Bradley Pulverizer Co.
Cummer, F. D., & Son Co.
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Kent Mill Co.
Miscampbell, H.
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Century Cement Mch. Co.
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Dunn Mfg. Co., W. E.
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Kent Mach. Co.

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Kirkpatrick Mineral Paint Works.
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Jeffrey Manufacturing Co.
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HYDRATING CYLINDERS.
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Buhler Co., Edward E.

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SAND.

Ottawa Silica Co.
Union Sand & Material Co.

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Dull & Co., Raymond W.
Stephens-Adamson Mfg. Co.
Webster Mfg. Co.

SAND-LIME BRICK MCHY.

American Clay Working Mch. Co.
Miscampbell, H.

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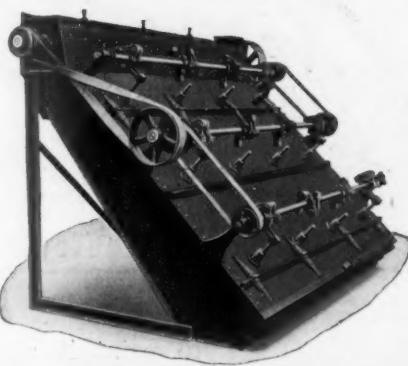
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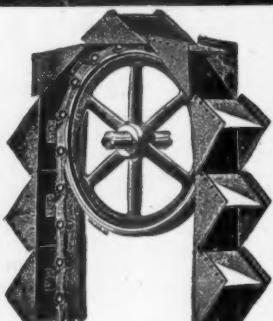
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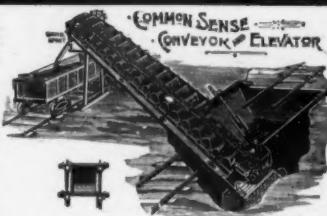
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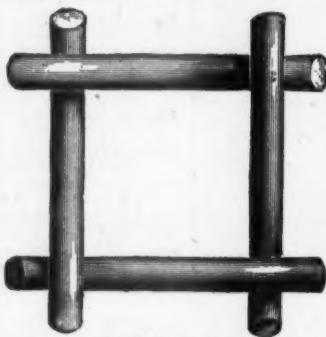
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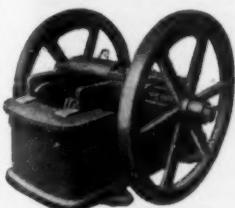
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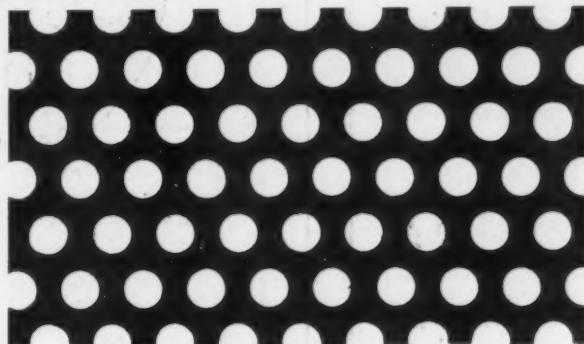
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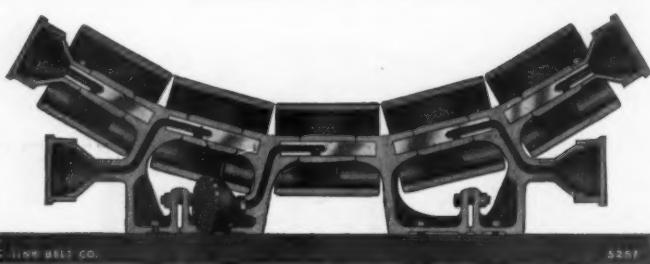
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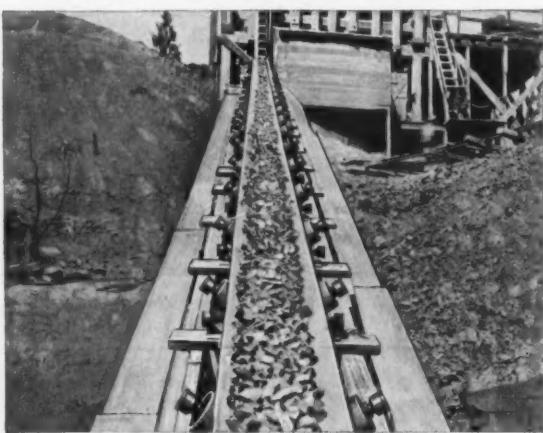
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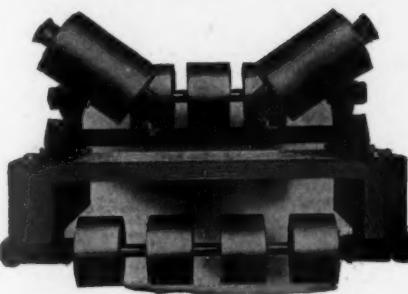
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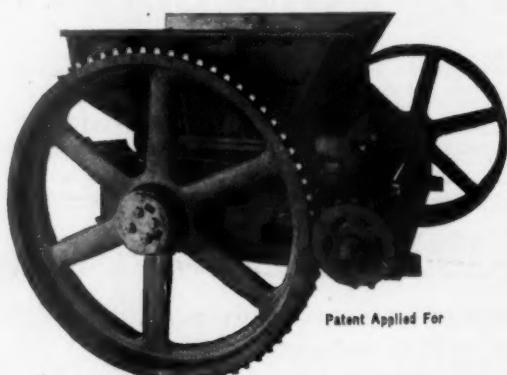
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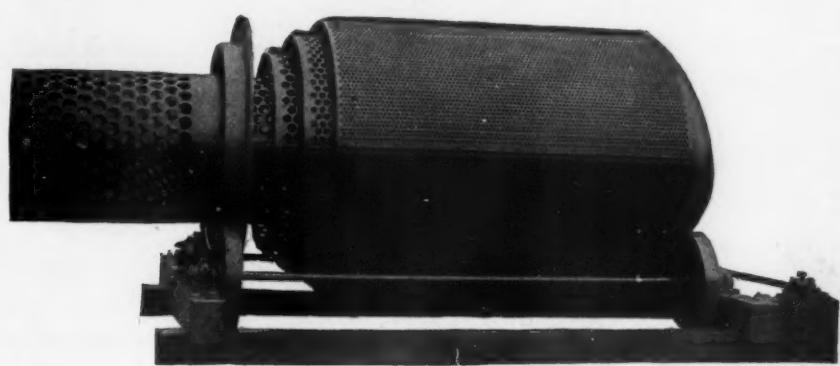
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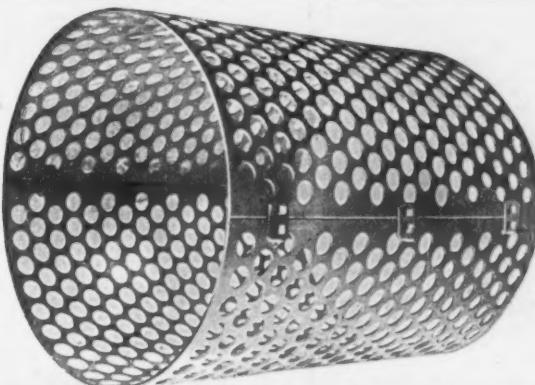
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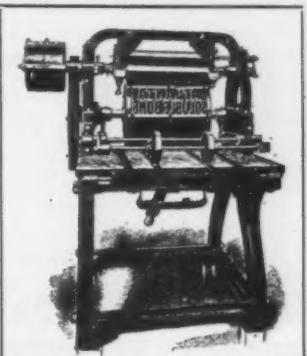
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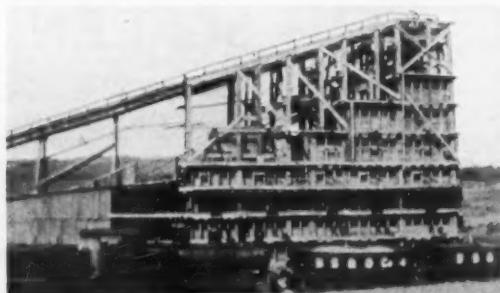


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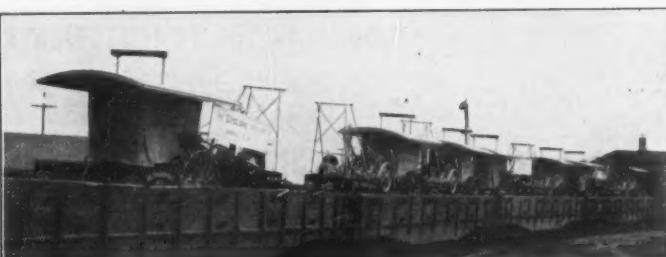


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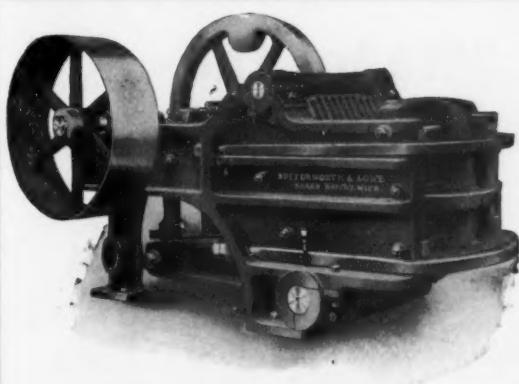


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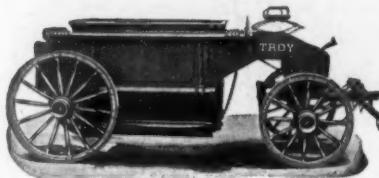
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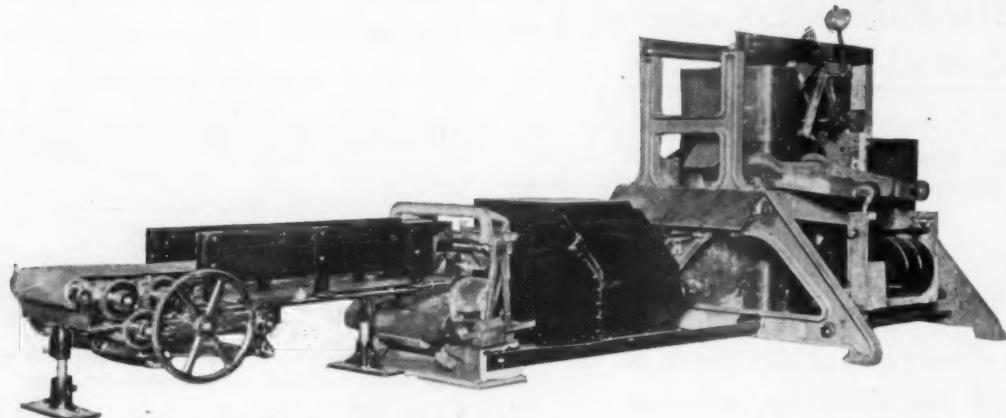
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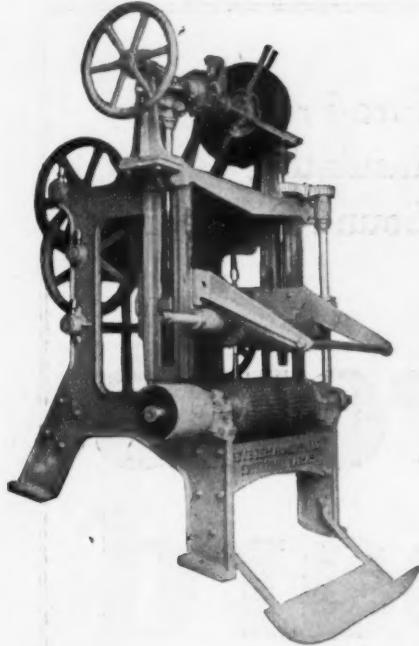
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The feed of the log to the saw is in direct proportion to the speed of the log. This automatic uniformity of feed INSURES UNIFORMITY of FINENESS in the PRODUCT.

No frictional devices are used, none being necessary.

All the working parts are planed. All of the gears are cut from solid steel. All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position.

The Saw mandril is extra heavy and made of the best crucible steel.

The journals are chain oiling. No machine can be more substantially built. Write for full information.

Okeene, Okla., June 14, 1911.

J. B. Ehrsam & Sons, Enterprise, Kans.,

Gentlemen:—Some time ago I received a letter from you asking how the wood fibre machine you shipped us is doing. Will say it is the best I ever used. In regard to any suggestions I could make as to how it might be improved, will say that I can make none, as it is O. K.

Yours truly,

SOUTHWEST CEMENT PLASTER CO.,

Frank Dodge, Sup't.

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens, Hair Pickers, Wood Fibre Machines, Calcining Kettles, Plaster Mixers, Power Transmission

The Enterprise Vertical Burr Mill

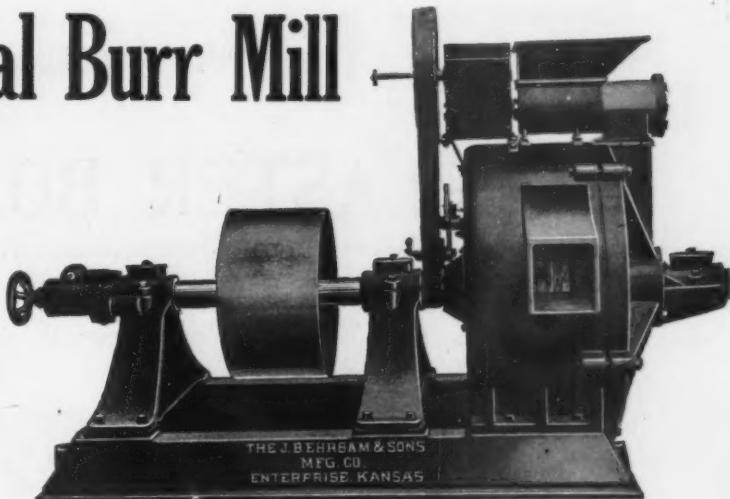
is especially designed for grinding gypsum, limestone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is STRONG and DURABLY built.

Has INTERCHANGEABLE STONES, which can be easily removed for dressing and replaced.

Is provided with our POSITIVE CONTROLLABLE FEEDER, which feeds an absolutely uniform stream into the mill at the required capacity.

MANY OTHER
ADVANTAGES.



The J. B. Ehrsam & Sons Mfg. Co.

Designers and Builders of
Complete Equipment for Plaster Mills
ENTERPRISE, KANSAS, U. S. A.

Improved
Modern
Lath



Fire-Proof
Insulating
Sound-Deadening

King's Fibrous Plaster Board

Standard Size 32' x 36'

THE RESULT OF "TRADE DEMANDS"

STRENGTHENED to stand the GREATEST STRAIN to which such material is subjected
TOUGHENED to a woody consistency to stand NAILING AND HANDLING

SHIPMENTS made to dealers of STRAIGHT OR MIXED CAR LOADS.

KING'S FIBROUS PLASTER BOARD

CALCINED PLASTER MOULDING PLASTER FINISHING PLASTER WOOD FIBRE PLASTER NEAT WALL PLASTER SANDED PLASTER MARBLE DUST

PLASTER BOARD NAILS

SERVICE The location of our works at the greatest railroad terminus in the East and our several warehouses enable us to make **Prompt** Shipments at all times.

J. B. KING & CO.

Plaster Board Department:
17 State Street, New York, N. Y.

WAREHOUSES:
Boston, Mass.
Chester, Pa.
Norfolk, Va.
Brunswick, Ga.

WORKS:
Providence, R. I.
Hartford, Conn.
Buffalo, N. Y.
New Brighton, Staten Island,
NEW YORK

SACKETT PLASTER BOARD

is a product of a progressive age, and offers you an *unusual opportunity* to make yourself stronger with your trade. Sackett is the logical successor of wood and metal lath—it enables you to give your customers better value for their money.

¶ The enormous increase in the use of Sackett throughout the country attests its popularity. Sackett sales are growing by "leaps and bounds"—is rapidly becoming the "National Lathing Material" because of its superior merits.

¶ Sackett is easily introduced in any market—and has great possibilities *in your market*. If you are not handling this "twin commodity" of U. S. G. Wall Plaster, make a "ten strike" by adding this trade-winning, profit-making utility to your line at once.

¶ Join hands with us—let us help you make 1912 your banner year.



U. S. G. Products and Methods will increase your business and profits and enable you to give greater satisfaction to your trade.

There never was a better time than right now to find out how well and profitably we can serve you.



\$ 4 4 4 4 \$



THIS Bungalow contains seven rooms besides bath and hall. Has full basement, with furnace heat throughout, electric and gas lights, hot and cold water in kitchen, basement and bath. Hardwood floors, oak and pine trim, front porch 10x28 feet, concrete basement floor. Shingle roof.

Complete in Every Particular for \$4444
AT ANY POINT INSIDE CHICAGO OUTER BELT LINE

All the walls and porches constructed of Concrete Hollow Tiles (Pauly Process) with all surfaces to the weather, covered with everlasting rough cast or stucco.

In order to make this magnificent offer to home builders of 1912, it will be necessary to answer this advertisement on or before May 1st, as agreement with the various contractors expires on that date. Clear title to lot must be shown to secure attention. Floor plans and full specifications supplied to inquirers who qualify for the information.

Chicago Structural Tile Co.

Tell 'em you saw it in **ROCK PRODUCTS**

PEERLESS

means without an equal and that is what our products are beyond the shadow of a doubt.

Peerless Plaster-Board

The Best on the Market To-day

Peerless Plaster Board has no superior on the market today. Strength, durability, and uniformity in thickness with clean cut edges are its chief virtues.

Peerless Plaster Board finished with Peerless Plaster make a Peerless Wall. Builders' Supply Retailers say it is the best Plaster Board manufactured. If you are "from Missouri" write us today for sample and prices.

Write today for our
PEERLESS PROPOSITION

M. A. REEB, : Buffalo, New York



Peerless Cement Plaster
Peerless Wood Fibre Plaster
Peerless Sanded Plaster
Peerless Ready Finish
Peerless Portland Stucco
(Exterior Plastering)

We Ship Mixed Cars
of Plaster and Board

Peerless Plaster Board comes in sheets 32 inches by 36 inches.

Peerless Plaster Board is a fire retardant and an efficient sound deadener.

Peerless Plaster Board is a non-conductor of heat and cold.

Peerless Plaster Board is an insurance against cracks, buckles, and lath stains.

Get in line with
THE PEERLESS LINE
WRITE TODAY

THE NATIONAL RETARDER CO.

Mills at

Webster City, Iowa
Port Clinton, Ohio

Successors to

The Chemical Stucco Retarder Co.

Webster City, Iowa

The Ohio Retarder Co.

Port Clinton, Ohio

The Binns Stucco Retarder Co.

Uhrichsville, Ohio

The same standard quality of retarder will be produced and marketed by the same people at the right price—only a change in name of corporation.

MAIL ORDER TO NEAREST MILL FOR PROMPT SERVICE

**AMERICAN
STEEL & WIRE CO'S**

**TRIANGLE MESH
CONCRETE
REINFORCEMENT**

MADE in rolls. Either solid or stranded tension members. A steel fabric of great strength, reinforcing in every direction.

"*Engineer's Handbook of Concrete Reinforcement*" furnished free upon request.

We Make

American Wire Rope	Barbed Wire
Aeroplane Wire and Strand	Woven Wire Fencing
Piano Wire	Fence Gates
Mattress Wire	Steel Fence Posts
Weaving Wire	Concrete Reinforcement
Broom Wire	ment
Fence Wire	Springs
Flat Wire	Sulphate of Iron
Flat Cold Rolled Steel	Poultry Netting
Wire Hoops	Wire Rods
Electrical Wires and Cables	Juniata Horse Shoes and Calks
Rail Bonds	Shafting Cold Drawn Steel
Bale Ties, Tacks, Nails, Staples, Spikes	Wire of Every Description

We issue separate catalog for each of these, gladly furnished upon application.

American Steel & Wire Co.'s Sales Offices

CHICAGO	12 West Adams Street
NEW YORK	30 Church Street
WORCESTER	94 Grove Street
BOSTON	120 Franklin Street
PITTSBURG	Frick Building
CINCINNATI	Union Trust Building
CLEVELAND	Western Trust Building
DETROIT	Ford Building
ST. LOUIS	Third Nat'l Bank Bldg.
MONTRÉAL	Bank of Ottawa Bldg.
ST. PAUL-MINNEAPOLIS	Pioneer Building, St. Paul
DETROIT	First Nat'l Bank Bldg.
SAFETY CITY	720 South 3rd West Street
HAN FRANCISCO	16th & Fallon Sts.
PORLTND	Ninth & Irving Sts.
SEATTLE	4th Ave., S. & Union St.
LOS ANGELES	Jackson & Central Avenues
NEW YORK	United States Steel Products Co., 30 Church St. Export Representatives



You Ought to Know Me by This Time

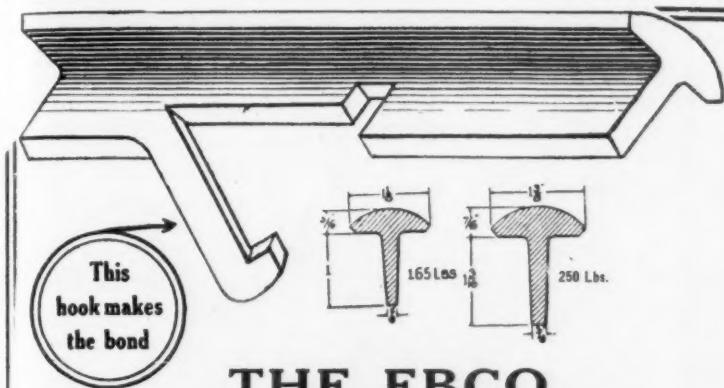
I'm the man that stands for the **Bay State Brick and Cement Coating**. It is a sure protection against moisture when applied to concrete, stucco, plaster or brick. It does not destroy the pleasing texture of concrete and the best architects and builders specify it.

Your stucco or concrete house or mill needs my coating. I've been making my coating for more than twelve years and have learned by experience the requirements of concrete, cement, and stucco construction. My coating sticks where it is put and is a fire retarder.

Write for booklet No. 16

WADSWORTH, HOWLAND & CO., Inc.

Paint and Varnish Makers and Lead Corroders,
82-84 Washington St.,
Boston, Mass.



THE EBCO HOOK CURB BAR

is a steel member to be embedded when the concrete is poured, forming a permanent protecting edge and acting as a re-inforcing member as well.

These bars have shear members which bond perfectly with the concrete. Rolled in straight lengths and in curves for street corners.

Write for circulars.

Edward E. Buhler Company

MANUFACTURERS

Sales Office: 103 Park Avenue New York City

Factory: Pittsburgh, Pa.

Baltimore Agents: Hudson Cement and Supply Co., Baltimore, Md.

Western Agents: Waterhouse Price Co., San Francisco, Cal.

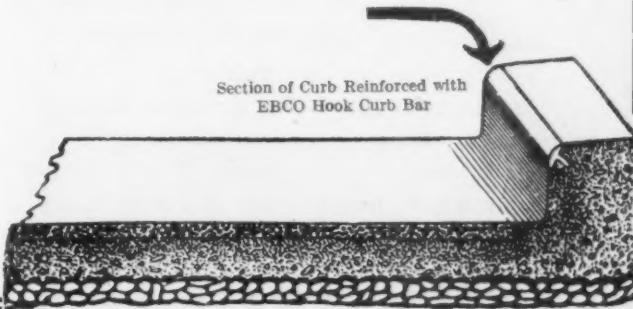
Louisiana Agents: Standard Paving & Construction Co., 321 Godchaux Bldg., New Orleans, La.

Akron and Canton Agent: Fred Fogarty, Akron, O.

Montreal Agents: Stinson-Reeb Builders Supply Co., Ltd., Montreal, Canada.

Protect and Reinforce the Corners of Your Concrete Curbing

City engineers and contractors who have had trouble with the old sandstone curbs or with plain concrete curbing, realize the need of a curb whose corner is properly protected against wear.



"THE STANDARD" LOW CHARGING CONCRETE MIXER (Formerly Eclipse)



The Only Low Charging
Batch Mixer

"THE STANDARD" will be used in the future as the name of the mixer, which we manufacture. This corresponds with our firm name as well as with "THE STANDARD" Scales which are so largely used all over the world. We find that while we have been selling our mixer under the name of Eclipse, it is known very largely by the public in general as "THE STANDARD" machine.

"THE STANDARD" mixers will be of the same high grade construction as heretofore, using all improvements and best designs from our many years of experience as manufacturers in this and other lines of machinery.

"THE STANDARD" Mixer will have our patented low charging arrangement and also our semi-automatic discharge, which together with other special features has enabled us to build up our large volume of business and have made our machinery so popular with contractors and users.

"THE STANDARD" Mixer will be built following out our general plans, to produce a high grade, simple constructed machine at moderate price, omitting all complicated and unnecessary mechanism and producing by a very simple method, the thorough mixing required for high grade concrete.

"THE STANDARD" Low Charging Mixer is offered to the contractor and user as a machine of large mixing capacity and low first cost, low operating cost, and low expense for repairs, avoiding expensive "shut-downs" and delays which are so frequent with complicated mixing machinery, even when this complicated machinery is in the hands of high priced experts.

"THE STANDARD" Mixer will merit the good record already built up for the Eclipse.

Write for Catalogue No. 33 which gives more information regarding this concrete mixer. Your name brings it.

THE STANDARD SCALE AND SUPPLY COMPANY

1345-1347 Wabash Ave.
CHICAGO

243-245 Water Street
PITTSBURG

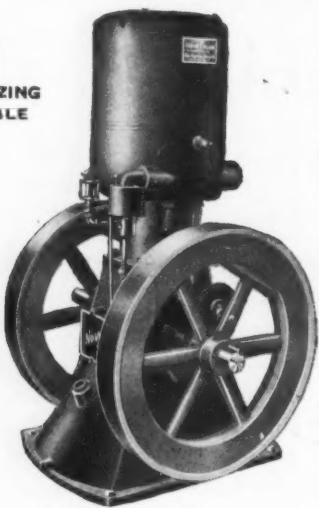
35 South Fourth Street
PHILADELPHIA

136 West Broadway
NEW YORK

Tell 'em you saw it in ROCK PRODUCTS

"The Engine for Every Purpose"

NO TANK
NO FAN
NO FREEZING
TROUBLE



**When You
Order a Mixer
Specify a
Novo Engine
To Run It**

Use it for all your cement machines.

That's what a big proportion of cement men are doing because they know from experience what unequalled service Novo Engines give.

The Novo runs as steady as a clock and you know what an advantage this is in concrete work. The

NOVO ENGINE

is especially adapted to cement work. It is so compact and light it is readily portable and takes up a minimum of space.

It is the lightest engine for the power developed.

The self-contained cooling system is unaffected by cold weather—it's guaranteed against frost damage.

All working parts are enclosed and oiled by a perfect splash system—even the main bearings.

Made in 1 to 10 H. P. and are guaranteed to deliver it.

Send for Novo Catalog

and satisfy yourself that the Novo is the best power plant you can use. We've got the facts to prove it if you're open to conviction. Write us.

Novo Engine Co.

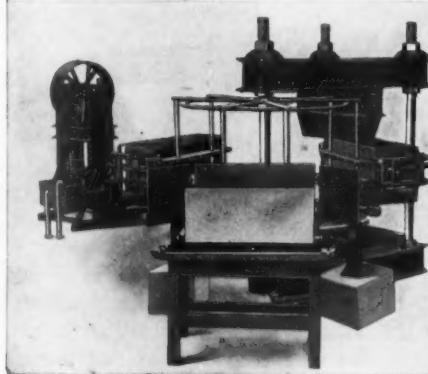
CLARENCE E. BEMENT, Secretary and General Manager

222 Willow St., LANSING, MICH.

CHEER UP!

YOUR TROUBLES WITH WATER SOAKING BLOCKS ARE PAST

We guarantee to make Strong Dense Non-absorbent Concrete Blocks cheaper and better than any Concrete Building Product you have ever seen made



WHY?

BECAUSE we ram a wet mixed Concrete by powerful Hydraulic blows. We supply the Cement at the time of mixing with sufficient water to produce perfect initial setting and the aggregates driven together held by suction permit perfect bonding. We follow these principles.

THIS MACHINE DOES THE WORK. WE LEAD, OTHERS FOLLOW. WE EQUIP YOUR PLANT WITH MACHINERY AND ALL THE ATTACHMENTS COMPLETE.

Our Machine makes 1000 blocks per day under powerful Hydraulic ramming of a wet mixed Concrete. No skill labor required. Two men make more blocks with our system, than four men using any other machine.

We make any style and shape blocks—and don't be misled for we make hollow block-angle blocks—veneering slabs face down in any design from the size of a brick up to the dimension stone.

We guarantee the machinery and sell it on its merits. Before purchasing write us—or better still come and see and be convinced.

THE FISHER HYDRAULIC RAMMING MACHINERY

1109 Kilburn Avenue

:: ::

Rockford, Ill.

When you have looked over all the advertisements in this issue of

ROCK PRODUCTS

and you still don't find what you want drop a line to

ROCK PRODUCTS

Information Bureau
537 SOUTH DEARBORN ST.
CHICAGO - ILLINOIS

= NIAGARA =

Wall Plasters Have Greater Covering Capacity, Work Smoother Under the Trowel and Have Greater Final Strength

Niagara Neat Cement

Niagara Sanded Mortar

Niagara Wood Fiber (Wood Pulp)

in 100-lb. Jute Sacks and 80-lb. Rope Paper Sacks. Mixed Car Loads of Wall Plasters, Hydrated Finishing Lime, Plaster Board, Land Plaster and Calcined Plaster for Finishing Purposes. These Products Mean Money to the Dealers in Builders' Supplies. Write today for prices.

NIAGARA GYPSUM COMPANY BUFFALO, NEW YORK

Dakota Plaster Co.

WE MAKE THE FAMOUS

"Black Hawk"

AND

"Dacotah"

Hair and Wood Fibred Plaster



Our Plaster is pure white; uniform in color; carries more sand, works easier and makes the hardest wall. Our Mill is thoroughly equipped with the most modern machinery, and we are always in a position to make prompt shipment. We guarantee every sack of our plaster.

Dakota Plaster Co. Rapid City, S. D.
Black Hawk, S. D.

CUMMER CONTINUOUS PROCESS

FOR

CALCINING GYPSUM

NO KETTLES
USED

PLANTS IN
OPERATION

Great Saving in Cost of Manufacture and Quality of Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.

THE STUCCO THAT STICKS

Most architects and builders have had trouble with stucco work cracking and peeling off. They have also found it difficult to get a uniform color that will last. The solution of these troubles is the use of

"ORIENTAL" STUCCO

MADE IN ALL COLORS

ALSO BASE COAT

Prepared stucco, shipped anywhere. Just add water and it's ready to apply. Remember: Oriental Stucco is slow setting, bonds perfectly and will not peel off. Its color is permanent. Superior to cement and sand stucco. Also manufacturers of interior colored finish. Write for catalog and color card.

WOLFE & MISNER

SOLE DISTRIBUTORS FOR

MONUMENT PLASTER CO. 602 ESSEX BLDG., NEWARK, N. J.

CROWING FOR
PLYMOUTH PLASTER
WOOD FIBER PLASTER
PLYMOUTH FIREPROOF
PARTITION BLOCKS
PLASTER BOARD
STEEL STUDDING

THE QUALITY BRANDS

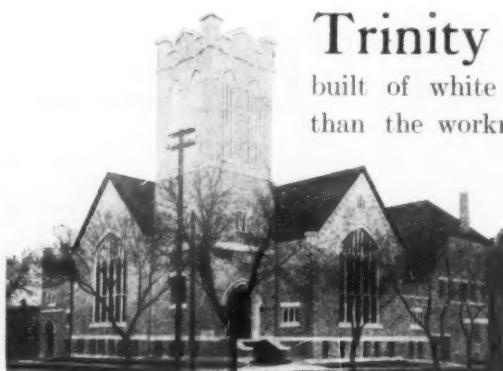
WRITE US FOR PRICES AND
ADVERTISING MATTER

Plymouth Gypsum Co.

Fort Dodge, Iowa



Tell 'em you saw it in ROCK PRODUCTS



Trinity Methodist Church, Lincoln, Nebr.,

built of white and granite faced brick. One **Peerless** Machine made them faster than the workmen could lay them. Brick *made by Lincoln Stone & Supply Co.*

The above is an example of the work that the **Peerless** is doing every day. In quality and quantity of product the **Peerless** has no equal. The **Peerless** is made of high grade carbon steel and heavy malleable iron; it can't spring out of alignment as will sheet steel and angle iron and will outlive its owner.

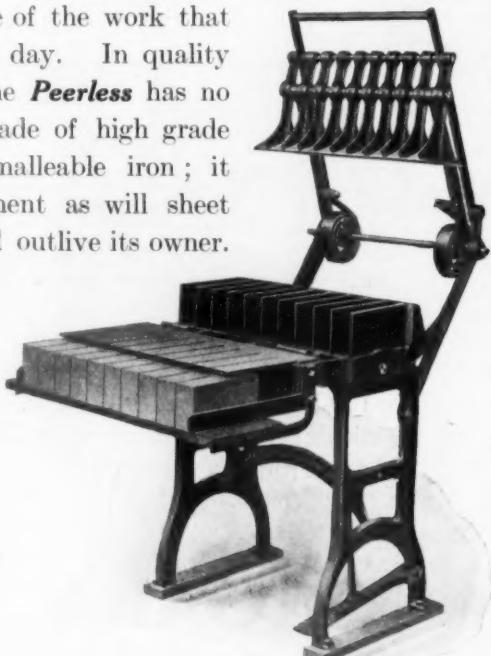
We guarantee its construction in the following unparalleled guarantee:

If machine is broken or injured in operation we will replace any broken or injured part FREE of charge as long as machine is in the hands of the original purchaser. Will others do this?

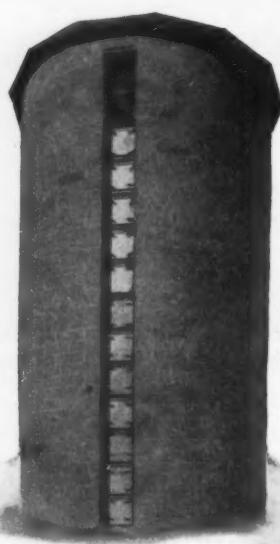
Cement is at the lowest price ever known. Buy the machine that will make money for you. Write for catalogue and booklet on cement brick.

Peerless Brick Machine Co.

18 NORTH SIXTH STREET, MINNEAPOLIS, MINN.



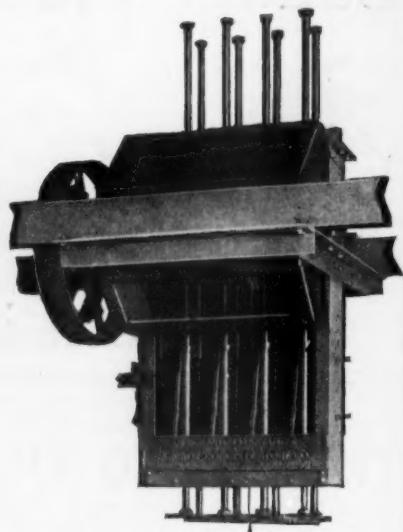
CAPACITY, 12,000 PER DAY.



Anchor Automatic Tamper

This great labor saving machine does not require any room in your factory except the space directly above the mold box. It is suspended from heavy frame work on the ceiling. Can be adjusted to fit any machine or used for all kinds of special work. The eight tampers are raised by roller crank-arms and each tamper strikes the concrete 75 times per minute. Better look into this little wonder.

Anchor Block Machines



Made in two sizes. Our "Standard" makes blocks that lay in the wall 8 inches in height, and 24 inches in length, of any width, such as 8, 9, 10, 11 and 12 inches, five sets of face plates. Our "Junior" makes blocks 8 ins. in height and 16 ins. in length, of any width such as 8, 9, 10, 11 and 12 ins., four sets of face plates. Get our Catalog.

Anchor Adjustable Silo Block Machines

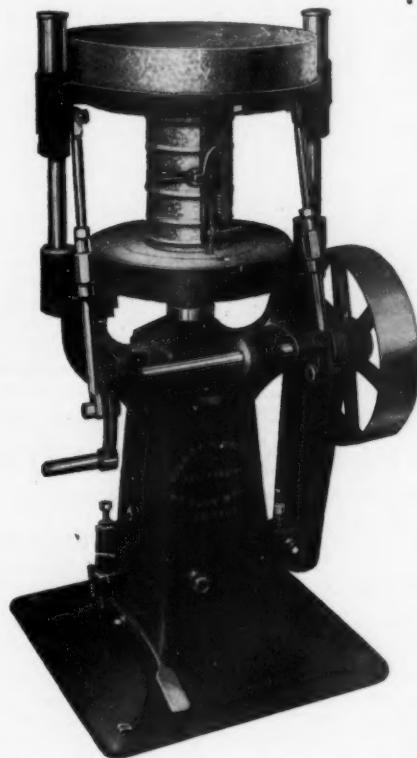
20 ft. The "Junior" makes blocks 8 inches in height, 16 inches in length, making any circle from 12 ft. to 20 ft.

Continuous Air Space is the principle upon which lies the prestige of Anchor Concrete Blocks and Silo Blocks. They are giving the only perfect result—a dry inner wall, impregnable to heat, cold or moisture. Investigate this system of block construction by sending for our catalogue and information.

Anchor Concrete Stone Company

ROCK RAPIDS, IOWA





PRICE \$175.00

MANUFACTURE CEMENT TILE AND MAKE \$22 A DAY PROFIT

By putting in one of these machines you can get the business in your town. The profit in making tile for your vicinity will soon pay for one of these machines. One man made enough in 12 days to pay for his.

With this machine you don't have to invest a large sum of money. You don't require a large force of men, because one man with material mixed will turn out 1,000 tile in eight hours. Two men will double this output.

DUNN TILE MACHINE

is built on the only correct principle. Broad solid base—cast in one piece, eliminating all vibration. All main bearings have bronze journals. Steel gears that run in oil. All the simple, necessary machinery is enclosed in the dust proof base. It makes all size tile from 3 to 12 inches, and makes them perfect.

MAKE TILE ON IT 15 DAYS BEFORE YOU ACCEPT IT

If it doesn't make good on every claim, ship it back at our expense. You pay us nothing. We don't want your money until we know you are satisfied.

SEND FOR BIG CATALOGUE. It tells all about this machine and our 15 days free trial offer. It gives the cost of making tile, the profits, etc. It also describes a score of other good, reliable, modern machines.

Get this book before you buy a Tile Machine, Block Machine, Brick Machine, Mixer, Chimney and Porch Molds and Sewer Pipe Molds. It will save you money.

W. E. DUNN MANUFACTURING COMPANY
4130 Fillmore Street CHICAGO, ILL.

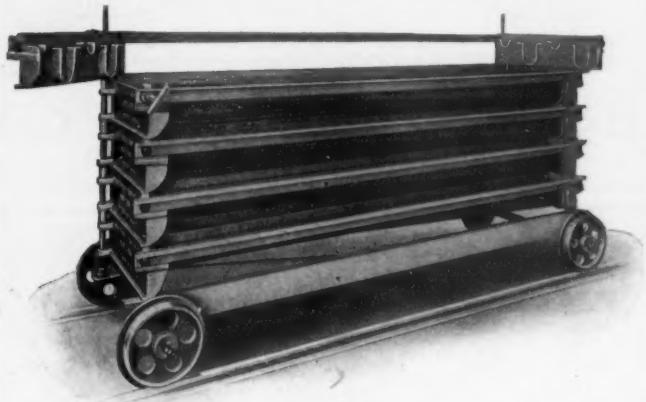
CONCRETE FENCE POSTS

T SHAPE MAKES THEM

STRONGEST, LIGHTEST, CHEAPEST

Used by leading railroads and interurbans

Our system is absolutely the only way for making "wet mixture" posts economically. Write for our catalog.

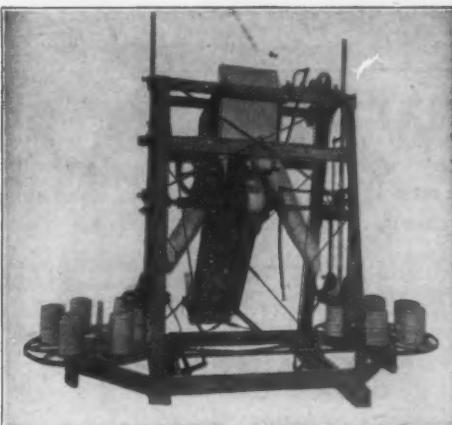


30 and 20 poured posts made at one time in our batteries. Above shows posts and molds in top section removed and end frames thrown back on hinges. We guarantee every mold. Write for our catalog at once.

OHIO POST MOLD CO.
1348 Nicholas Bldg., TOLEDO, OHIO

See our exhibits at the New York, Chicago and Kansas City Cement Shows

THE McCracken Double Tile Machine



The McCracken Double Tile Machine makes all sizes of cement tile from 4 to 16 in. in diameter at the rate of from 10 to 20 tile per minute. Also makes building blocks or construction tile 8x8x16 at the rate of 2000 to 3000 per ten hour day.

The machine will make two different sizes of tile at the same time or building blocks and tile at the same time, or either end of machine can be used without using the other.

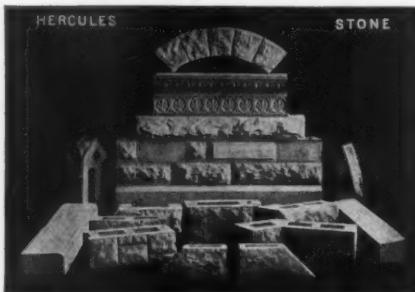
The machine has no cans and runs just as smooth at high speed as when running slow. Takes less labor per 1000 tile than any other machine.

Tile are packed so hard that the large sizes can be carried without the use of pallets. Machine is very simple and strong and runs very light, and elevator can be started and stopped without stopping the machine.

See the McCracken Machine before you buy. Write to

The Sioux City Cement Machinery Company
219 4th Street, SIOUX CITY, IOWA

Hercules Blocks Sell on Sight



The dense non-porous blocks of Cement Stone made on

Hercules Block Machines

satisfy the eye of the most critical architect or house builder. It is one of the chief merits of the Hercules Machine that it permits blocks to be made of WET concrete. This results in greater density, greater strength and greater water proofness. The Hercules is the only machine that expands with the requirements of your business. The only machine that makes dimension stone up to Six Feet long.

The Hercules is built upon one solid frame 6 feet long. If your demand is just for an 8x8x16 block, you only need the mould box for that size. As your trade increases, you merely add new plates to be attached to your original machine. You don't have to buy a new machine every time you wish to make a different size. There are many other points connected with Hercules machines you ought to know. These are fully told in a "little book" we have just issued. Send for it today.

Century Cement Machine Co.
288-298 St. Paul St., Rochester, N. Y.

CLINTON METALLIC PAINT CO. CLINTON, N. Y.

LARGEST AND OLDEST MANUFACTURERS OF
BRICK AND MORTAR COLORING

Be sure you get the genuine with the "Little Yellow Side-Label" on each package

Let us tell you about Side-Walk Black.

FOWLER & PAY

Brown Hydraulic Lime, Austin Hydraulic Cement, Jasper Wall Plaster, Brick, Stone

CEMENT WORKS: Austin, Minn.
PLASTER MILL: Ft. Dodge, Iowa
WAREHOUSE: Minnesota Transfer

MANKATO, MINN.

THE "KENT" PRECISION MIXER (STATIONARY TYPE)

Built in Four Sizes and Suited to ALL CLASSES of Plants
Making Concrete Products

The "Kent" is the only mixer made that will operate with absolute certainty when being charged by gravity from bins above the hoppers holding large quantities of materials, making it possible to run it continuously for hours at a time with little or no attention from the operator. It has a patented adjusting lever by which the output may be regulated to suit the work in hand. It measures the aggregates accurately in any proportions desired by simply adjusting the gates to the proportions wanted. Before purchasing a mixer investigate the "Kent." It means money and satisfaction for you.

Catalog mailed on request.

THE KENT MACHINE COMPANY
306 NORTH WATER ST., KENT, OHIO

The MORRILL SYSTEM of STEEL FORMS Reduces Cost, Eliminates Waste of Lumber and Labor



Note the "Swing Up", 30 feet (15 plates), raised in 10 minutes.

Simple—Rigid—Indestructible

Any man can put it up. Adjustable to any dimensions and any thickness.

No Bolts—No Nuts—No Wires

All wedge connection—locked by a stroke of the hammer. Adopted on hundreds of buildings for Real Estate Companies, Railroads, and Foreign Contracts.

Makes Poured Houses Possible.
Investigate fully, it is worth your while.
Write today for Catalogue.

Read & Morrill, Inc.
179 Jerolemon St., Brooklyn, N.Y.

PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

Wet Process, Face Down, Damp Curing.

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincible, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE.

THE PETTYJOHN COMPANY
614 North Sixth Street. Terre Haute, Indiana.

Red, Brown, Buff and Black



MORTAR
COLORS

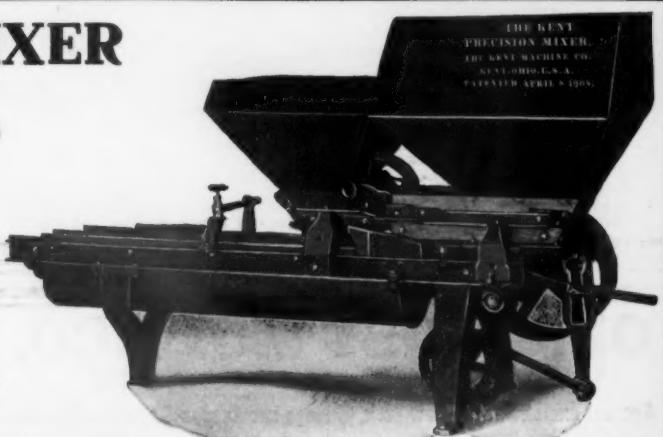
The Strongest and
Most Economical
in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

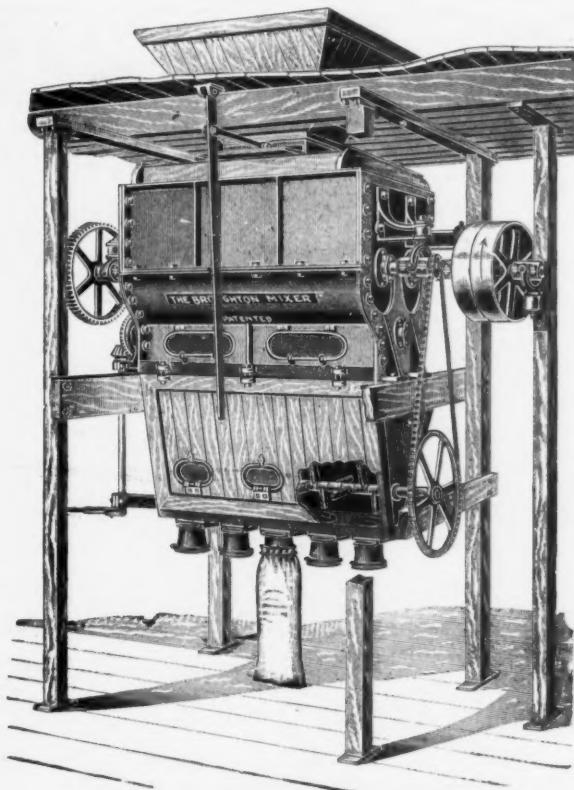
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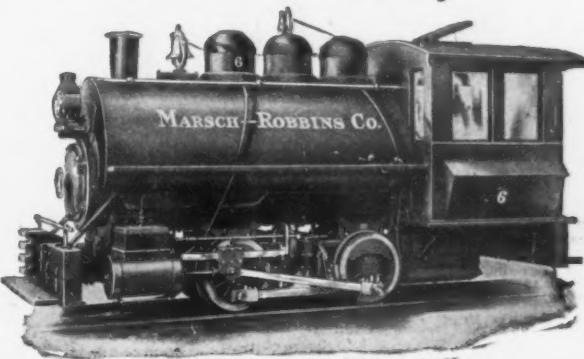




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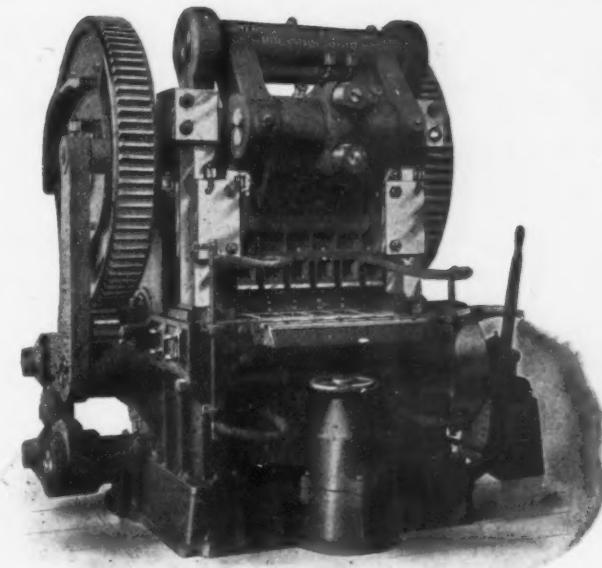
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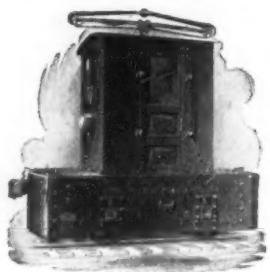
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